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EUROPEAN ASSESSMENT OF GLOBAL PUBLICLY FUNDED AUTOMOTIVE RESEARCH

Publicly funded automotive research in Brazil, Russia and Malaysia



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1 Introduction

1.1 Background

The FP7 project EAGAR benchmarks the current public automotive research activities at international level, in particular the European Union with Brazil, Canada, China, India, Japan, Malaysia, Russia, South Korea, the United States and 13 EU Member States. EAGAR identifies the national road transport visions and roadmaps, research priorities, supported key topics, technology pathway, as well as the level of investment. This enables a direct comparison of national automotive R&D policies relating to the environment, safety and congestion. The EAGAR study provides a key perspective on global investments designed to improve automotive vehicle technologies for a greener, safer and smarter road transport system.

1.2 Objectives

This deliverable report summarises the situation of the RTD funding system in Russia, Brazil and Malaysia. With respect to published vision statements, research targets and roadmaps, the national funding programmes of the past 4 years and the governance of automotive RTD funding in Russia, Brazil and Malaysia. The report is basis for the subsequent benchmarking analysis, which delivers the key results of EAGAR addressing the following issues:

- Overview of national road transport visions, research agendas and roadmaps
- Comparison of automotive research priorities and investments focused on vehicle technologies
- Characteristics of national automotive research funding systems and approaches
- Highlight areas of strength and weakness in European RTD compared to the analysed countries
- Potential international cooperation areas from a European perspective

This study benefits the competitiveness of Europe and enables the stakeholders to adjust its visions & plans for the future. Date of publication: September 2010. It is available from the EAGAR website WWW.EAGAR.EU as deliverable D.3.4.

1.3 Methodologies

This country report is mainly based on comprehensive investigations via desk research, information from the responsible programme managers and individual feedback from experienced project managers and researchers. The methodology used was developed in the first months of the project. It is consistent for all target countries. The data collection was mainly done from May to November 2009.

The four main categories are:

- General and automotive data about the country
- Published challenges, visions, targets for automotive research
- Funding organisations and hierarchies for automotive research
- National public funding programmes with dedicated calls or permanently open between in the years 2006 to 2009.

2 Description of the main WP results

Work Package 3 from the EAGAR project comprises the research on general country information, national automotive challenges, visions and targets, relevant institutions and the funding programmes found throughout the country. In this case, the Work Package is related to Brazil, Russia, and Malaysia, their automotive industry and the national RTD activities.

Throughout these three countries' research special situations have been found that prevented obtaining better results on the data available for RTD funding. One of the most noted aspects is the lack of information throughout the entire system, where one could start looking at, what would seem the most logical institution to ask and so on. This was defined by one of the researchers as a treasure hunt, as the information was there but very difficult to obtain. This lack of information also produces erroneous guidings from the people in charge, when they think that somebody might have a better answer, but turns out to be wrong or unnecessary information.

Another common aspect is the lack of a funding structure in the three countries, as in none of them were we able to find a really structured national plan to which everyone could look up to. This produces that information is not readily available for the interested entities and that the countries' governments do not have a clear idea of what they are looking for and who to ask for the management of the resources. So, there are some independent programmes guided from an institution, which stay hidden or unpublished while they could be very useful for other institutions which in turn are unaware of the existence of such opportunity.

This lack of structuring and misinformation leads the governments to put the RTD projects in hands of private consultancy firms, which then look to allocate the resources where they consider brings them the most benefits. The use of private consultancies makes it difficult for third parties to obtain information and access to funding programmes, as many research bodies are not able to pay for such services. Aided to this, the funds tend to go into entities that are "friends" with the government, have really good political connections or belong to a specialized corporation for which there is some favoritism.

Another reason, is that the responsible entities wanted to know more about our business plan, the objective of the project, why were we looking for the information, etc. Even though the EAGAR objectives were always explained as such, they thought that we had something else in mind and that we were trying to get information for personal purposes. Showing them that this was an EC funded project was not much help in obtaining information.

2.1 BRAZIL

2.1.1 General Information and Automotive Data



Figure 1.- Brazilian Flag

The Federative Republic of Brazil is the largest country in Southern America, covering 8,514,877 km² in the Eastern South American region. Brazil shares boundaries with all South American countries except Chile and Ecuador. The country is made out of 26 states and one federal district, Brasilia, the capital of the country. Brazil has a population of 198,739,269 inhabitants with an average population density of 24 inhabitants/km². Total GDP for the year 2009 is estimated in 2,024 trillion USD.



Figure 2.- Map of Brazil

Brazil is characterized for its large and well developed agricultural, mining, manufacturing and service sectors. The economy surpasses all other South American countries and expands its presence in world markets. Since 2003, Brazil has improved its macroeconomic stability, building up foreign reserves, reducing its debt profile by shifting its debt burden towards real denominated and domestically held instruments, adhering to an inflation target and committing to fiscal responsibility. In the year 2008, Brazil became a net external creditor and its external debt totaled less than its foreign reserve holdings. 2007 and 2008 are marked with a record growth followed by the onset of the global financial crisis in late 2008. Foreign investors pulled out of Brazil, creating huge swings in the stock market.

Even though Brazil experienced two quarters of recession due to the decreased commodity based exports requirements, it was one of the first countries to begin a recovery from all the emerging markets. Consumer and investor confidence have revived and the GDP growth returned to positive in the second quarter of 2009. There is an expectation of a 5% GDP growth for 2010. The automotive industry in Brazil is one of the most important on the continent and it is one of the strongest economical supports for the country in terms of sales volume, manufacturing and suppliers.

Despite of its undeniable importance, the local automotive industry is considered self sustainable by Brazilian government, so, the credit line for any related matter is quite limited. The most common subsidy granted to OEMs is state tax exemption to some extent and small benefits. There are not many Brazilian companies investing in automotive R&D activities, and therefore there are no specific credit lines for RTD. This fact is now adressed by the Productive Improvement Programme explained in the next chapter.

2.1.2 National Funding Organisations and Hierarchies for Automotive Research

Funding Organisations

There are several organizations in Brazil that provide support for the industry, and which are in charge of managing the development of the automotive industry in the country. Some of them are:

*Ministerio da Ciência e Tecnologia (MCT)*¹. - The Ministry of Science and Technology is responsible for promoting technological innovation, research and development at strategically selected areas.

*Ministerio do Desenvolvimento, Indústria e Comércio (MDIC)*².- The Ministry of Development, Industry and Commerce is responsible for industry, commerce and services development policies, copyright and technology transfer, metrology and international trading. This ministry has direct relation with the automotive industry and has presented a symposium on the tendencies and innovation on the automotive sector in Brazil.

*Banco Nacional de Desenvolvimento Econômico e Social (BNDES)*³. - This is the main agency for governmental investment programs.

*Agencia Nacional do Petróleo (ANP)*⁴. - In terms of R&D, they have a special credit line for engine test laboratories (on going).

Other organizations with influence:

*Ministerio das Minas e Energia (MME)*⁵. - Supports R&D activities in the sector of energy. It has a programme that publishes information on Biodiesel in Brazil and a programme for validating the use of hydrogen powered buses.

¹ *Ministerio da Ciência e Tecnologia (MCT)* (<http://www.mct.gov.br/>)

² *Ministerio do Desenvolvimento, Indústria e Comércio (MDIC)*
(<http://www.desenvolvimento.gov.br/sitio/>)

³ *Banco Nacional de Desenvolvimento Econômico e Social (BNDES)*
(<http://www.bndes.gov.br/inovacao/default.asp>)

⁴ *Agencia Nacional do Petróleo (ANP)* (<http://www.anp.gov.br/CTC/index.asp>)

⁵ *Ministerio das Minas e Energia (MME)* (<http://www.mme.gov.br/>)

*Delegação da Comissão Europeia no Brasil*⁶. - This delegation carries out everything related to the participation of Brazilian institutions in the European Union Framework Programmes.

2.1.3 Automotive Visions and Strategic Research Agendas

In Brazil, the Federal Government has defined a set of strategies for the automotive sector in the country. These strategies aim to sustain the actual expansion cycle followed by the Brazilian industry, by increasing the offer capability, keeping the payment balance, elevating the innovation capacity and strengthening small and medium enterprises.

One of the most relevant goals is the increase of private RTD expense to 0,65% of the GDP, from a 0,51% from year 2005. This goal is accompanied by the objective of increasing exports, dynamizing the SME market and the fixed investment rate. The automotive complex is found in a group of enterprises whose goal is to strengthen their competitiveness. Some of the measures taken include tax reduction and credits. Also, the BNDES is set to provide more funding for industry and services (more productive capacity, innovation and modernization). Parallel, the BNDES should provide support to innovation through a new technological innovation line, designed specifically for RTD projects.

The actual situation in Brazil shows a strong growth in the internal and regional markets and a 2.9 million vehicle production in 2007 with an 85% of the capacity utilized. These data have helped to set the goals of achieving 4.3 million vehicles produced (5.1 in 2013) by 2010, an increase in RTD expense of 2% by 2010 and 930,000 exported vehicles. The challenges faced are the increment in the productive capacity, modernization of the fleet, strengthening product engineering and increasing the export volume. This programme is to be managed by the MDIC.

Another important goal fixed by the Brazilian government, is to produce by the year 2013 a total of 5.1 million vehicles, accounting also for a quite relevant increase in the number of Flex Fuel powered vehicles that can be run with Bioethanol. To do this, there will be new stimulæ for investments in RTD to perfect the Flex fuel technology for cars and motorcycles. This generates in Brazil a great opportunity to export these vehicles and to manage the Flex fuel system (production, management, consumption).

2.1.4 Funding Programmes

The Automotive Industry Support Plan focuses mainly on improving the competitiveness of the Brazilian Industry and to start generating RTD projects with the collaboration of the private institutions, since their participation is very reduced. Also, the aim of the programme is to make use of the entire productive capacity of the country, by providing the companies with credits and some tax exemption benefits and revenues and supporting the vehicle exports by creating opportunities in other countries via commercial agreements.

Brazil has participation in the 6th and 7th Framework Programmes, with a total of 155 projects presented and a received funding of 14,397,318 € in the 6th FP. Participation in the 7th Framework Programme 1st call accounts for a total of 192 presented projects with a requested funding of 46,597,973 €, from which 21 (10,25%) projects were approved. This represents less participation than Chile, Argentina and México, basically due to the fact that less projects were presented to the Commission.

⁶ *Delegação da Comissão Europeia no Brasil* (<http://bbice.ibict.br/>)

2.2 RUSSIA

2.2.1 General Information and Automotive Data



Figure 3.- Russian flag

The Russian Federation or Russia is by far the largest country in the world, covering a mere 17,098,242 km² in the Northern Asian region, sharing from the Ural Mountains European territory. Nevertheless, the location of the country is unfavorable, as it is far from the main sea lines and much of the country lacks proper soils and climates (either too cold or too dry) for agriculture. Mount El'brus is Europe's tallest peak. The country is comprised of 46 oblasts, 21 republics, 4 autonomous okrugs, 9 krais, 2 federal cities and 1 autonomous oblast. The capital is Moscow, one of the two federal cities (the other is Saint Petersburg). Russia has a population of 141,900,000 inhabitants with an average population density of 9 inhabitants/km². The total GDP for the year 2008 was USD 1,698,647,000,000.



Figure 4.- Map of Russia

Since the collapse of the Soviet Union, the Russian Federation has undergone significant changes, by moving from a globally-isolated and centrally-planned economy to a market-based and globally-integrated economy. In the 1990s, a set of economic reforms led to a privatization of most of the industry, with some notable exceptions in the energy and defense sectors. This rapid privatization process has left equity ownership highly concentrated, as the process assumed to be a loan-for-share system really became a politically connected oligarch system. The private sector is still dependent on heavy state interference.

Nowadays, the Russian industry is primarily split between global competitive commodity producers and other less competitive heavy industries that remain with a high dependance on the domestic market. This reliance on commodity exports makes the Russian economy vulnerable to boom and bust cycles followed by the highly unstable swings in global commodity prices. In the year 2009, Russia became the world's largest exporter of oil and natural gas and the third largest exporter of steel and aluminium. Even so, the national industry has shown a decrease of 11% in production throughout the year 2009.

Since 2007, the government has started an ambitious programme to reduce dependency on domestic market and build up the country's high technology sectors, yet the results have proved poor so far. Russian agriculture has lived a time of revival by shifting from a net grain importer to a net grain exporter. The economy had averaged 7% growth since the 1998 financial crisis. However, the Russian economy was one of the hardest hit by the 2008-09 global economic crisis, as oil prices plummeted and the foreign credits disappeared. Long-term challenges include struggling with a shrinking workforce, a high level of corruption and poor infrastructure in need of large capital investment.

2.2.2 National Funding Organisations and Hierarchies for Automotive Research

Funding Organisations

The *Ministry of Industry and Trade of the Russian Federation*⁷ is a federal executive body with policy-making and regulatory functions in the civil and defence industries, as well as in aviation technology development, technical standardization and metrology, and with functions of authorized federal executive body carrying out state regulation of foreign trade activities.

The *Federal Highway Agency* from the *Ministry of Transport of the Russian Federation*⁸ is in charge of proposing and executing Governmental policies referring to transport, road construction and traffic safety.

The *Federal Agency of Science and Innovation of the Russian Federation*⁹ is in charge of forming the orders and governmental contracts for R&D projects in science and high-tech industries. It belongs to *Ministry of Education and Science*.

Russian Chamber of Commerce and Industry. - Includes two relevant committees for RTD.

*Committee of Science and Technical innovations and High Technologies*¹⁰. - This Committee is in charge of industrial development and innovation, commercial politics, small and medium enterprises and development of the society of information. (Consultancy services)

*Committee of Automotive Technology*¹¹. - This Committee is in charge of automotive development and innovation, commercial politics, small and medium enterprises and development of the society of information. (Consultancy services).

The *Federal Agency on Technical Regulating and Metrology*¹² is the federal executive body that performs the functions on rendering state services, administration of public estate in the field of technical regulating and metrology, carries out the licensing of activity with respect to manufacture and

⁷ *Ministry of Industry and Trade of the Russian Federation* (<http://www.minprom.gov.ru/eng>)

⁸ *Ministry of Transport of the Russian Federation* (<http://www.mintrans.ru/>)

⁹ *Federal Agency of Science and Innovation of the Russian Federation* (<http://www.fasi.gov.ru/>)

¹⁰ *Committee of Science and Technical innovations and High Technologies*
(<http://www.tpprf.ru/ru/main/committee/knti/knti1/>)

¹¹ *Committee of Automotive Technology* (<http://www.tpprf.ru/ru/main/committee/komavto/pol/>)

¹² *Federal Agency on Technical Regulating and Metrology*
(<http://www.gost.ru/wps/portal/pages.en.Main>)

maintenance of measurement instrumentation and also implements the functions on the state metrological control and supervision until there are changes in the Russian Federation legislation.

Other organizations with influence:

*Research Centre for Testing and Refinement of Automotive Vehicles FSUE "NAMI"*¹³. - Independent governmental development, research, testing and homologation centre.

*AAI Association of Automotive Engineers*¹⁴. - Based on NIIAMT (NAMI) testing centre, aims at exchange of automotive experience and knowledge between engineers. On the internet page the latest news are from April 2007.

*Rosbusinessconsulting RBK*¹⁵. - The biggest private consultancy and statistics company dedicated to different segments of the industry.

*The Moscow State Technical University "MAMI"*¹⁶ (MSTU "MAMI"), *Moscow State Automobile and Road Technical University "MADI"*¹⁷, the *OAR Association of Russian Automakers*¹⁸ and the *Association of European Businesses*¹⁹ are also organizations related to the automotive industry in Russia.

2.2.3 Automotive Visions and Strategic Research Agendas

In the case of Russia, there are no clear or focused visions or targets related to the automotive industry. This is because the country is going through a rough transition period where a political and economical scheme is still being modified and structured to help in the development of the country. This provokes that specialized programmes are not wide spread and that the available resources remain managed by local authorities or individual entities, which in turn, are unaware of the importance of publishing such information.

2.2.4 Funding Programmes

Russia has traditionally been a strong technology, automotive and heavy industry machine manufacturer. The technological advancements had previously demonstrated the country's capacity on research, manufacturing and design. Nonetheless, the radical political, social and economical changes have led the country to struggle in the maintenance and development of the big enterprises throughout their vast territory. Practically, all local OEMs are still governmentally owned and managed.

The Russian automotive market was considered as the third in Europe and one of the most dynamical in the world. In the year 2007, the sales grew 61% compared to those of 2006. The global crisis affected dramatically the local automotive industry, since the Russian companies were still lacking the nowadays necessary flexibility and modern internal structuring. The government support is now limited, and the industry has found a deep recession time.

¹³ *Research Centre for Testing and Refinement of Automotive Vehicles FSUE "NAMI"* (<http://www.nami.ru/>)

¹⁴ *AAI Association of Automotive Engineers* (<http://www.autoengineer.org/tasks.htm>)

¹⁵ *Rosbusinessconsulting RBK* (<http://www.rbcnews.com/>)

¹⁶ *The Moscow State Technical University "MAMI"* (<http://www.mami.ru/>)

¹⁷ *Moscow State Automobile and Road Technical University "MADI"* (<http://www.madi.ru/>)

¹⁸ *OAR Association of Russian Automakers* (<http://www.oar-info.ru/?lang=en>)

¹⁹ *Association of European Businesses* (www.aeprus.ru)

Three programmes are found in Russia, from which two focus on the automotive industry directly while the third one is open for technological achievements. The automotive destined programmes are completely different, as one programme is similar to many found in Europe to renew the automotive fleet by obtaining a privileged credit on a nationally manufactured automobile. The second programme focuses on the development of new diesel engines. The latter project, which focuses on any technological advance, aims at improving the competitiveness of the Russian industry in a global scope.

It is worth noting that efforts are being taken in the country to impulse their national OEMs to produce new, high tech goods that comply with the competitiveness level required in the global market.

2.3 MALAYSIA

2.3.1 General Information and Automotive Data

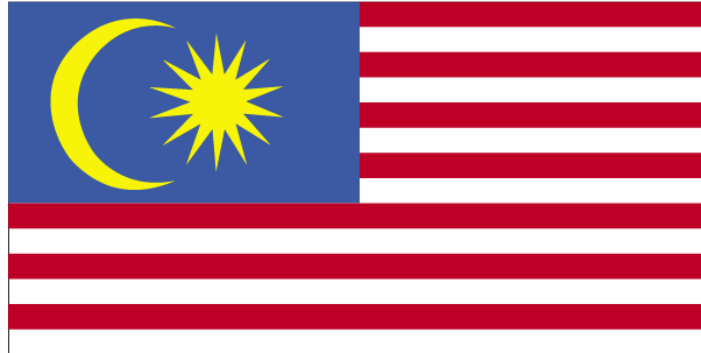


Figure 5.- Malaysian Flag

Malaysia is located just above the Equatorial line, in the heart of southeast Asia. The territory expands for 330,252 km² and includes two very different natural regions, separated by the South China Sea (around 530 km). These two separate regions are known as peninsular Malaysia and Insular Malaysia. Kuala Lumpur, the capital, is located in Peninsular Malaysia, which represents 40% of the total territory. The insular territory is comprised of a mountainous system that includes Gunung Kinabalu, the highest mountain in the country. The country is divided in 13 states and one federal territory (Kuala Lumpur). The total population as of 2009 is 25,715,819 people, having a population density of about 78 inhabitants/km². Total GDP for the year 2009 was 378,900,000,000 USD.



Figure 6.- Map of Malaysia

Malaysia, which is considered a middle-income country, has gone through a transformation period that started in the 1970s as a transition from a producer of raw materials into an emerging multi-sector economy. After coming to office in 2003, former Prime Minister ABDULLAH tried to move the economy further up in the value-added productive chain by attracting investments in high technology industries, medical technology and pharmaceuticals. Prime Minister NAJIB continues this effort, and this administration is also continuing to boost domestic demand and to separate the economy from the dependence on exports. Nevertheless, exports remain a significant driver of the economy.

As an oil and gas exporter, Malaysia has profited from higher world energy prices, although the rising cost of domestic gasoline and diesel, with the strained government finances, have forced Kuala Lumpur to reduce the subsidies. The government is also trying to reduce its dependence on state oil producer Petronas, which supplies 40% of government revenue. The central bank maintains

healthy foreign exchange reserves and its well-developed regulatory regime has limited Malaysia's exposure to risky financial instruments and the global financial crisis.

The transformation that Malaysia has been undergoing in the past decades has had special influence on the automotive industry. Malaysia is known to be a planned economy, which prepares 5 yearly budgets. The automotive sector has played an important role in the Malaysian economy planning, and has made use of the protective economic system of the country. The imports in Malaysia are subject to taxes of up to 200%, making imported goods very restrictive for the general population. With this protective economical market, Malaysian automakers benefit from having a captive market with their cheaper, domestic products.

Malaysia can be divided into 3 big ethnic groups: Malaysian, Chinese and Indian. The ethnic group to whom each person belongs to is marked in the identification document. The Bumiputera or sons of the Earth, is a protected group, accounting for 60% of the Malaysian race, which are muslim. The importance of being a Bumiputera, is that there are special benefits for them. So, in order to impulse the national automotive sector and domestic sales, the government created Proton, which is a muslim or Bumiputera company. This fact made Perodua lose its national car maker status. Added to this, Proton has a list of established suppliers to buy from, and this suppliers are also Bumiputera.

The economic and political management performed by the Malaysian Government is something of a cover up, as they have been doing changes but slowly. The government delays commercial treaties in the Asian region, they reduce import taxes on very low rates and the people of the country start earning more per capita on a really slow pace. Yet, this strategy has shown ineffective. Thailand has overcome Malaysia in the economical and commercial aspects, and Indonesia has started to do so.

Noting that the Malaysian economy has not reached the expected levels, the government started programmes to impulse the economy. Proton has been forced to export vehicles, but with the unlucky fact that their products were not on the level of international competitors. In general, all Malaysian exports found this negative characteristic, trademark of the protective economical system. Nowadays, Malaysian companies have started to look for technological and development support on international companies in order to obtain the desired international competitiveness level.

On March of 2006, the Malaysian Government implemented the NAP (National Automotive Policy), which aims at increasing the green technology development in the country, allow the industry to access funds for green projects and low interest rate funding for RTD. Unfortunately, there is no clear implementation structure for this programme. In the case of this programme, some companies (like Proton) have more opportunities and benefits than others, even above universities which are not quite considered.

2.3.2 National Funding Organisations and Hierarchies for Automotive Research

Funding Organisations

The *Ministry of International Trade and Industry (MITI)*²⁰ has to plan, legislate and implement international trade and industrial policies that will ensure Malaysia's rapid development towards achieving National Economic Policy and Vision 2020.

*Malaysian Industrial Development Finance Berhad (MIDF)*²¹. - MIDF was incorporated on 30 March 1960 mainly for the purpose of ensuring access to financing for manufacturing-based small-and-medium enterprises (SMEs) as part of Malaysia's strategy to expedite the industrial sector development. From boasting the status as Malaysia's maiden development finance institution, MIDF has over the years transformed into a diversified group.

*Ministry of Science Technology and Innovation (MOSTI)*²². - The mission is "Harnessing Science and Technology through Innovation (STI) and human capital to value-add the agricultural and industrial sectors for economic advancement, particularly through Biotechnology, Information and Communications Technology (ICT)."

*Malaysian Industry-Government Group for High Technology (MIGHT)*²³. - MIGHT's predominant role is to enable consensus building and coordination for Industry-Government partnership in high technology. It provides strategic technology inputs for Industry and Government, nurtures technology-based enterprises and entrepreneurship as well as prepares knowledge workers relevant to strategic and high technology industry needs.

Other organizations with influence:

*Universiti Malaysia Pahang*²⁴. - Research and Development: Running research and development work to fulfil customer needs by utilizing available UMP's facilities and expertise. This is an effort from the government to make the university as a corporation. Therefore, it can generate revenue to UMP from these activities.

*Proton Berhad*²⁵. - One of the main objectives for the creation of Perusahaan Otomobil Nasional Berhad (PROTON) was to propel Malaysia into the 21st century as an industrialized nation, where the acquisition of the technological knowledge, know-how and expertise, would help the country achieve both short-term and long-term goals.

*Perodua*²⁶. - The company's R&D focuses on developing capabilities in automotive technologies ranging from basic testing, design and styling engineering to manufacturing engineering skills. The activities include styling / modelling, concept car development and the ability to undertake major facelifts.

²⁰ *Ministry of International Trade and Industry (MITI)* (<http://www.miti.gov.my>)

²¹ *Malaysian Industrial Development Finance Berhad (MIDF)* (<http://www.midf.com.my>)

²² *Ministry of Science Technology and Innovation (MOSTI)* (<http://www.mosti.gov.my>)

²³ *Malaysian Industry-Government Group for High Technology (MIGHT)* (<http://www.might.org.my>)

²⁴ *Universiti Malaysia Pahang* (<http://www.ump.edu.my>)

²⁵ *Proton Berhad* (<http://www.proton.com>)

²⁶ *Perodua* (<http://www.perodua.com.my>)

2.3.3 Automotive Visions and Strategic Research Agendas

Malaysian innovation model has two approaches. Market Driven Innovation (MDI) acquires technology based on market requirements while the first step in Technology Driven Innovation (TDI) is the science research in order to develop a new technology to introduce it in the market.

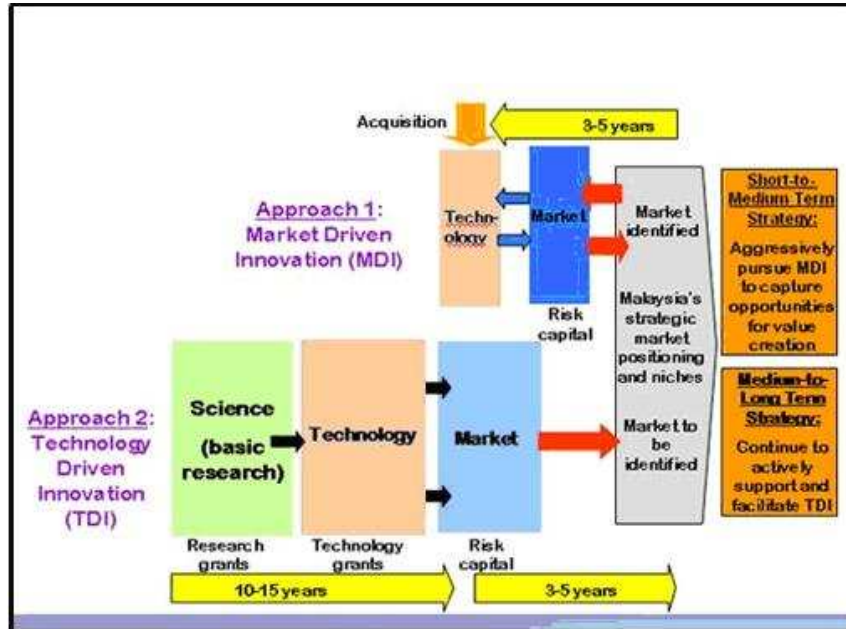


Figure 7.- Malaysian Innovation Model

2.3.4 Funding Programmes

Malaysia can be considered as a closed country referring to external investment and research funding. Only one programme is allocated in the country, the Soft Loan Scheme for Automotive Development (SLSAD). This programme is designed to encourage automotive parts and component manufacturers to rationalise their operations and assist them in tooling acquisition, development and production; productivity improvement and enhancing export performance. This is not a pure funding programme, it is a loan programme. A general statement is that Automotive RTD activities are not conducted in Malaysia only extended RTD for localization of products by local OEMs, and some University-led projects.

3 Discussion and Conclusion

In the special case of this report, three different approaches to RTD could be found according to the needs of the countries and their actual social, political and economical environment. Some characteristics are shared by the countries, while some others differ from each other. Similar features we can find are that all the countries are going through a rough economical situation, and the transitions they are facing provoke a confusing and not systemic organization related to scientific research and industry. On a different facet is that all the countries come from different continents, backgrounds, political systems, and their economies are based on different activities.

For Russia knowledge of the world's biggest country could be gained, that has an important automotive tradition and a new economical and political scheme, which in turn is slowly gaining terrain on the world markets. Russia is a new economy order that is striving to catch up with the European market and to provide high quality technological products, to rely more on exports than on the internal market and to attract foreign investment. Nevertheless, the economy is still based on governmentally managed companies and the wealth distribution is totally dispaired. This new political and economical order has been growing since the fall of the Soviet Union, and has not had the correct leadership to direct itself and exploit the vast capacities found in the nation.

Malaysia, on the other hand, is a protectionist economy, which founds its economical situation on the internal consumption of nationally produced goods. All imported goods in Malaysia are subject to very high taxes and the national produce lacks the required quality to compete with imports. This fact makes Malaysia trail behind neighbouring Asian countries that have more open trade agreements and higher quality in their industry. In an attempt to improve the product quality and the economy, some trade associations have been created and the taxes reduced, accepting a higher amount of imports to come into the country. Nevertheless, this has only shown to Malaysia that their national products, especially automotive related, are very low quality and that quite a big effort in development is required.

Another interesting fact about Malaysia is the racial preference that is present in the country's political and social environment, where better conditions and opportunities are given to the Bumiputera, which are muslim Malaysian people. This fact is even stated in the national identity card. This preference is generating differences in the management of the economy, as the private enterprise managers and owners are generally Bumiputera with direct relation to the national government, obtaining special conditions and obligations from manufacturers for supply, production and selling conditions. The government in Malaysia has become aware of the situation and has started to publish some programmes to impulse the national automotive and technological industry. The plan is to make use of the already existent manufacturing capacity and to take advantage of their geographical location.

In Brazil, the funding schemes for RTD in the automotive sector are not widely published and access to the information is difficult. The two main programmes are the participation in the European Commission Framework Programme calls and their Automotive Industry Support Plan, which has just been designed. Many of the efforts in the industry lead to the development of biofuel technology, because Brazil is a country that leads the production of Bioethanol and other biological fuels and is betting strongly on becoming the pioneer in this sector of the automotive and industrial world.

Referring to the European Commission Framework Programmes, Brazil has participated in the 6th and 7th Programmes, having less participation share than Mexico, Chile or Argentina. This is because

there are few projects presented to contest, so, the Brazilian efforts are focused on encouraging the industry and research sectors to participate actively on the programme.

Nowadays, Brazil is suffering a change, from a manufacturing country to a development country, increasing their share in RTD activities and obtaining design and decision centres for their industry leaders. The automotive and aeronautic sectors jointly with the biomedical, agricultural, nanotechnology and biofuel thematics are participants in the 7th FP from Brazilian institutions. There are also some credit lines for RTD which are complicated to know.

In Brazil, policies and applications for credit lines for RTD projects depend on joining political and technological efforts, it is not clear which of them are active or even how much funding is available for each programme. Many private consultancies offer their services to ease the way to obtaining one of these credits. Obviously, these consultancies have all the information and charge the people in order to obtain profit, that is one of the reasons why the information is quite unavailable for regular citizens and companies.

On the other hand, the ministries in Brazil are jealous of releasing information without having a clear idea or explanation of what the information will be used for. In the case of our project, the ministries and other governmental entities are uncertain of our purposes, they want to know the real objectives of the contact and our future business plan and so on. The purpose we explained were the objectives of Project EAGAR but they seem to think there is something else behind our work.

As a conclusion we can state that the main reasons why information about funding is quite unavailable in these countries is confusion. Two of the countries are very big, going through rough economical and political transitions and the political system is unaware of the importance of RTD activities. Even when the automotive industry in Russia and Brazil is strong enough to look for itself, the aid from the government is necessary in the structuring and frameworking of their researching capital. In the case of Malaysia, the protectionism of the economy and favoritism to one ethnical group difficults the tasks of researching for opportunities. Also, the low quality found some short time ago in their automotive industry proves that they are not aware of the importance of having strong competition, and yet the RTD activities remain still as there is no conscious need for them to improve.

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5 Annex

CONTACTS OF THE PROJECT

RUSSIA

ORGANISATION	PERSON	POSITION	EMAIL	REPLY	COMMENTS
Ministry of Transport			okt@minprom.gov.ru	No	
Ministry of Economy			mineconom@economy.gov.ru	No	
Chamber of Commerce and Industry of the Russian Federation			tpprf@tpprf.ru	Yes	Willing to participate for a cost.
Association of European Business in Russia (AEB)			info@aebrus.ru	No	
Spanish Consulate in Moscow	Mr. Alberola	Industrial Department Chief	balberola@mcx.es	No	

BRAZIL

ORGANISATION	PERSON	POSITION	EMAIL	REPLY	COMMENTS
Delegation of the European Commission in Brazil	Angel Landabaso	Encarregado de negócios a.i. Conselheiro Ciência y Tecnologia	angel.landabaso@ec.europa.eu	Yes	Gave contact of Paulo Egler
Centre of Support for Technological Development at University of Brasilia (CDT/UnB)	Paulo Cesar Gonçalves Egler (PhD)	Coordenador do Projeto BB.Bice	pegler@unb.br	Yes	Gave contact of Carolina Chaud
AEA - Associação Brasileira de Engenharia Automotiva	Carolina Chaud	Dept. Planejamento	carolinachaud@aea.org.br	No	

PROGRAMMES

MALAYSIA

Overall programme initiative name	Programme call name	Programme call description	Funding organisation	Programme call end date (DD. MM. YYYY)	Main point of reference
Development Finance Products and Services	Soft Loan Scheme for Automotive Development (SLSAD)	Programme to encourage automotive parts and component manufacturers to rationalise their operations and assist them in tooling acquisition, development and production; productivity improvement and enhancing export performance	Malaysian Industrial Development Finance Berhad (MIDF)	N/A	http://www.midf.com.my/cms/development-finance/slsad

RUSSIA

Overall programme initiative name	Programme call name	Programme call description	Funding organisation	Programme call end date (DD. MM. YYYY)	Main point of reference
Federal Agency of Science and Innovation of Russian Federation	Federal Purpose-Oriented Programme. Development of Electronics and Radio Electronics manufactures	R&D and industrial basis for working out and manufacture of competitive high technology electronic and radio-electronic production	The Ministry of Industry and Trade of the Russian Federation	01/01/2008	http://www.fasi.gov.ru/fcp/electro/
The Ministry of Industry and Trade of the Russian Federation	The programme of Privilege Credits for buying the new vehicles for organisation and private use	Privilege credits are given for buying the local production models (the price not more then 8000 euro).	The Ministry of Industry and Trade of the Russian Federation	19/03/2009	http://www.minprom.gov.ru/press/release/showNews/sls-sue?url=activity/auto/news/145
The Government of Russian Federation	Federal Purpose-Oriented Programme. Development of diesel manufactures	R&D of modern diesel engines' serial production	The Government of Russian Federation	01/01/2002	http://www.niisp.ru/News/Events/art24