

Construction of Railway Economy In Asean: Issues And Challenges

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Abstract

Countries of South East Asia (SEA) mainland have shown major concerns on the need to revamp and improve the railway sector within their respective borders specifically and throughout the SEA mainland region collectively. Following the agreement of ASEAN member countries to include the development of railway industry as one of the priority areas under the Master Plan on ASEAN Connectivity 2010 (MPAC2010), major constructions are being carried out to improve the facilities and services of rail-based transportation throughout the region. The challenges, however, do not lie in the initial development phase as during the other phases after that, especially, during the penultimate, nearing-of-completion phase. With huge amount of money invested during all phases of the developments, the next focus of the sector is to ensure that these development projects will have a positive return of investments (ROI) for all countries involved. This new focus entails the application of prudent business strategies by the stakeholders of railway transportation sector in all ASEAN countries concerned. It is only with a proper and strategic business planning that the railway transportation sector could improve their position to be one of the economic movers key in their respective countries, which is in line with the intention of revamping the sector.

Keywords: Railway, railway developments, Master Plan on ASEAN Connectivity, South East Asia railway

Introduction

Since it was announced during the fifth Association of South East Asian Nations (ASEAN) summit which was held in 1995 (Wu, 2016), Singapore-Kunming Railway Link (SKRL) has been included as one of the objectives of ASEAN's transportation sector. The vision of connectivity between countries through railway has been put forward by the SKRL project will expand the reach of each ASEAN country's railway to international routes, cross-border areas which is yet to be the common connection for railway sector of SEA, at least not for the time being. The ideas of having a railway connection intra region within

SEA and inter region with China and other countries were well received by the members of ASEAN. This has long been overdue since looking at the conditions of the railway facilities for the last few decades, it can be said that this mode of transportation has been given quite a limited attention as for its development and improvements. The idea of railway connectivity, intra and inter region, might be able to increase the dependency of transportation industry towards the railway sector, which is not the case currently. With the objective of opening up the opportunities for advancement and improvement of not only the transportation industry but also the regional economy, railway development have been included as one of the top transportation priority projects of MPAC2010, and later extended as one of the 18 physical connectivity priorities under Master Plan on ASEAN Connectivity 2025 (MPAC2025).

Methodology

The main objective of this study is to review the development of ASEAN railway, identify the challenges and spell out the benefit of having it. The methodology used qualitative in nature. It involved extensive documents review which included economic report, documentaries, expert interviews, reviews of border trade and land transport cross border agreements and international trade agreements. Following table presented the methodology used for this paper. Using qualitative content analysis and thematic analysis, the aim of the interview was to identify the issues arises. While document review aimed at gathering the information on the current status of the railway project, the issues arises and challenges.

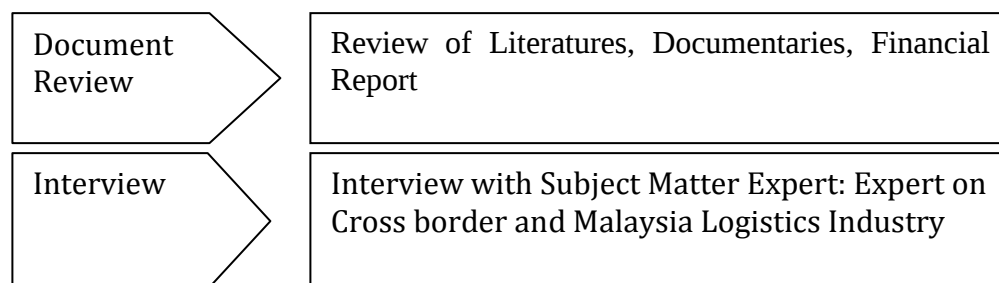


Figure 1. Methodology of Data Collection

The scenario

According to Yajid (2014), challenges of railway developments could be categorized into two major categories, namely physical and non-physical barriers. The physical barriers concern heavily with the state of the facilities of the railway sector. Missing links and different facilities' specifications within and between countries are among the major problems under this category of barriers (Yajid, 2014). Barriers under this first category can be said as have been slowly reduced, based on the current phase of railway facilities' developments in SEA carried out by the countries involved respectively in such developments. On top of that, with the involvement of China in the developments of railway facilities in some of the SEA mainland countries, it might eventually boost up the speed of the railway facilities constructions and developments, at least from the point of view of high speed train's constructions and developments (Anguang, 20117). Despite the fact that non-mainland countries of SEA, namely Indonesia, Philippines and Brunei and the yet-to-be a member of ASEAN, Timor Leste, are not being affected by this mega scale railway sector developments' idea and projects, at least for the time being, the possibilities of providing connectivity between these states, for example between the Borneo part of Malaysia and Indonesia with Brunei, cannot be discounted.

Between the physical and non-physical barriers of cross border railway movements, on the surface of it, it seems that the physical aspect of developments are the one that has been seen as something very important to the SKRL project. Without physical facilities that make movements of trains possible, the idea and plan of SKRL, which is to have a seamless journey throughout the region and neighboring countries, could not be materialized. Looking into physical barriers from a broader point of view, the barriers seem to originate from one major point namely the issue of finance. This major issue in turn revolves around two concerns, namely the financial wherewithal to develop the facilities and the Return of Investment (ROI) of the developments. It seems that the financial issues have eventually caused the railway developments idea and project to be stagnant with

no significant development to improve the facilities or a manifested increase in confidence on ROI from the stakeholders in the railway sectors of the countries concerned. Figure 1 below illustrates the factors that cause the project to stop still at its track.

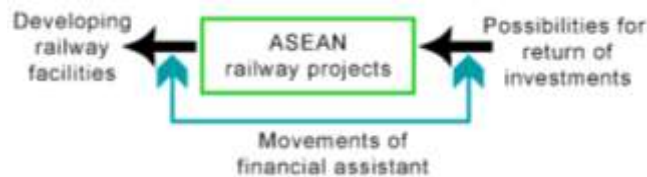


Figure 2. Financial relationship between facilities' developments and ROI

In order for ASEAN to be comfortable with the decision to develop the railway facilities to curb the physical barriers faced by them, it must be ensured that the project is feasible and the ROI is foreseeable and within reach. Until then, there could be only limited significant developments of such facilities. The concerns on this matter have been illustrated by ASEAN through MPAC2025. Under financing barriers, MPAC2025 listed down three major sub-categories, namely ROI, fiscal capacity and capital availability. The later two, fiscal capacity and capital availability are concerned with the spending capability of the ASEAN members to support the proposed ideas and projects. As far as business prudence is concerned, every single cent spent by the respective ASEAN country involved should be able to provide profits for the investment made –break event is the least wanted position since profit is of utmost importance and losses are something that should not come into the picture when doing business. But, referring to Figure 2 above, a simple conclusion can be drawn that there is yet any confirmation on the positive ROI from the project. With quite a huge investment been put forward by the countries involved in the project, and in some cases involving high loans that tied the nation to a long-term repayment period (Geopolitical Monitor, 2017), it is a very rational move for ASEAN to worry about the project since the ROI is still unclear. ROI will affect the developments or railway facilities and vice versa.

Even so, since the project of this scale requires a very huge capital and yet to have any benchmark in this region, to calculate the possibilities of success of the

projects in the future is an unprecedented and will prove to be a huge task for the countries involved. Despite all these problems, rail-based transportation has been around this region for more than a century and thus the construction of infrastructures and facilities this mode of transportation is not new to most of the countries in this region. In this regards, it is an apt move for the relevant authorities in the ASEAN countries concerned to look into what the long history of rail-based transportation in this region could offer to guide them in their attempt to take the rail-based transportation in ASEAN region to the next level.

The history

Throughout history, the developments and constructions of railway facilities in SEA were being fueled by the interest of the authorities, namely the government of the day in the countries concerned. Taking the example of Malaya, which is the generic name of peninsular Malaysia prior to independence, the developments and constructions of railway facilities were always invariably influenced by the needs of the British colonial government. During that time, railways were being constructed with the main purpose of connecting mining areas and seaports, the first of these railways being built in 1885 (Nordin, et al., 2017). As recorded, the first constructed railway system in Malaysia was built in Taiping, Perak. The railway network was constructed to connect Taiping tin mines with the seaport located at Kuala Sepetang. It was constructed so as to accommodate the need of the British colonial government in relation to raw materials. The minerals extracted from Malaya would be carried by sea transportation to the colonialists' country of origin, namely England (Sin Chew Daily, 2014). The situation was not much different in other colonialized countries in the region. In Vietnam, during the French colonial era which lasted for six decades, the first constructed railway line was completed in 1881 to connect My Tho and Saigon. In Saigon, the line was further extended with tram line that connected Saigon and Cholon port (McCombie, 2015). According to Hays (2008), the purpose of the construction of railways in Vietnam by the French was mainly to enable them to trade by

facilitating movement of goods. The construction of railway from the port towards the desired destination could be translated as an economic decision which was necessary to enable trades to happen for these colonial governments, rather than for social or other reasons. Referring to the examples of Malaya and Vietnam, it can be seen that the focus of the railway is for the transportation of goods rather than passengers from the point of view of early railway history in ASEAN.

Based on the information provided by officers from the Royal Malaysian Customs and Keretapi Tanah Melayu Berhad (KTMB), the furthest journey that had been undertaken by KTMB was from Kuala Lumpur, Malaysia to Chiang Mai, Thailand, a distance of approximately 2174 km. As being recalled by them, this long haul journey only occurred once. Normally, cross-countries railway movements will consist of a trip that span the borders of only two neighboring countries – only in a very few rare occasions will such cross-borders movements span the boundaries of three different countries (e.g. Singapore-Malaysia-Thailand or vice versa). As mentioned by Malaysian Royal Customs officers in Woodlands, Singapore, there used to be shipments of gypsum board by trains from Thailand directly to Singapore though those shipments did not last long and the frequency was actually very low. Learning from the railway history of SEA countries, it can be concluded that cross-border movements of train are not something that frequently happened and of the few examples available, the spans of the cross-borders journeys, in terms of countries transited, are not that big since it involves only a few countries, though admittedly, distance-wise, such a journey would definitely pass as a long haul journey. Despite the existence of railways systems that theoretically could connect Singapore to China, until today, there is yet to be a movement of train from Singapore to China, which can be used as the benchmark to various important things for cross border railway movements in SEA for the railway developments' projects.

Past economic railway lines

Historically, SEA countries have a very limited amount of experience in dealing with international railway movements. With only a few of such journeys recorded, the countries have to make do with limited reference points in progressing with the plan for railway connectivity as intended in SKRL project. Based on information obtained from the records of a few parties consisting of officers from the Malaysian Royal Customs, KTMB and a few freight forwarding agents in Malaysia, the movements of train from and to Malaysia are only limited to what can be termed as border movements, namely movements from Padang Besar, Perlis, Malaysia to Padang Besar, Thailand and vice versa and movements from Johor Bahru, Johore, Malaysia to Woodlands, Singapore and vice versa. Based on KTMB records, KTMB rail has yet to have a journey crossing more than two countries. In other words, most of the services that took place before only involved the movements of KTMB'S trains to neighboring countries either to the south or to the north of Malaysia.

With the SKRL project being put in place as one single important transportation development to take place in years to come, the idea of reviving the railway industry in SEA boosted significantly. Based on the proposed project, most of the routes involved will be using the existing routes of the participating countries with some upgrades. Not only that, the said project also requires quite a significant number of new railway lines throughout the SEA region, especially for Lao People Democratic Republic (Lao PDR), since Lao PDR is yet to own railway lines and facilities. The main reason for that is the geographical condition of the nation, which has quite vast mountainous areas. According to National Geographic (2018), only 10% of the country located at below 600 feet from the sea level. Most of the people in the world live on the areas that have the elevation of 500 feet or less from the sea level (National Geographic, 2018). Figure 3 below shows the mountain areas percentage of countries in SEA, whereby between 60% to 80% of Lao PDR is covered by mountainous areas.

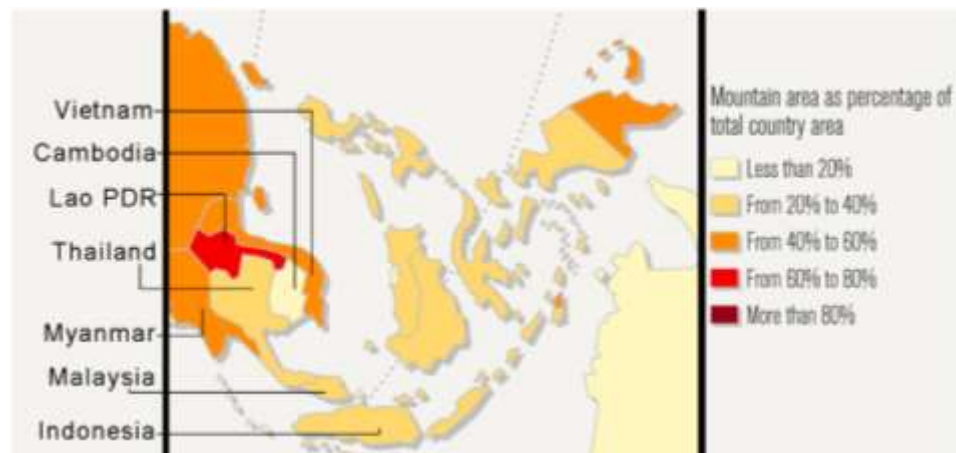


Figure 1. Percentage of mountain areas of total areas of countries (GRID Arendal, 2018)

Despite the limited experience of ASEAN countries in relation to cross borders railway movements, this scant experience cannot be disregarded as they provide important historical data on railway sector in the SEA region. Examples of data that can be culled from this experience are economic opportunities and possibilities in the past and their connection to the selection of railway routes used before in the region. These raw data, when viewed from historical perspective, could be used to deduce how the railway business had been planned in the past (namely, railway routes followed and connected economically important spots). This principle that the historical objective of railway developments is basically economic rather than social could be a guiding principle for future railway developments in the SEA region.

Landbridge

According to Dato' Abd Razak Abd Malek, the president of Malaysian Chartered Institute of Logistics and Transport (CILT), which was then head of KTMB cargo, previously there was a service provided by KTMB, which is known as landbridge that was his initiative. The conceptual thrust of this particular service is the connection of ports through railway connectivity. According to him,

“That is the reason why there is landbridge. Ship that sail on land. The land becomes the bridge, which is used as the route for the movements of containers from Port Klang to Bangkok Port. Conventionally, the containers, which intended to be shipped from a port to another port, need to use vessels or sea transport as the medium of transportation. This time around, we create the shipments of containers using land bridge.”

Based on Royal Malaysia Custom in Perlis Work Order of 2010 document, the land bridge is defined as follow:

“Train movements which carried the Full Container Load (FCL) from Thailand through Malaysia and heading directly towards the ports for exportation and vice versa.”

As mentioned by Dato’ Abd Razak Abd Malek, the idea behind landbridge is for railway to be the connector, and trains as transporter between ports. The idea behind this service is to reduce the time required to travel from one port to another. The topography of SEA mainland requires ships to travel around Malaysia if they are destined for southeast ports of Thailand from northwest port of Malaysia. The distance is quite far considering the fact that the ship needs to make a detour around peninsular Malaysia. Increased distance between ports entails increased time and money, which are factors that possibly need to be reduced to a very minimal level. Thus, multimodal transportation might be used to facilitate the shipment in order to reduce the cost and time of the journey. It was a win-win situation for both parties as both of them, sea and rail transporters, received the benefits from the business relationship established. It is also a good business for the neighbouring countries railway authorities, KTMB of Malaysia and State Railway of Thailand (SRT), since both of them share the profits over the service provided. An example where landbridge reduces the transportation costs for business is the decision by Honda to use railway to distribute its car components to its car assembly factory in the region.

Honda's experience

In 2003, Honda made a significant move by opening an assembly line in Malacca, which later had been continued with the opening of its second assembly line in 2014 (Honda Malaysia, 2014). With the opening of the new production line it resulted in the increase of production of vehicles in the factory that is located at Alor Gajah, Malacca, Malaysia. With the production estimated at between 400 to 500 vehicles per day, it is very important for the factory to have a very efficient mode of transportation to assist its logistics, which resulted in the change of transportation medium to rail transportation (Honda Malaysia, 2014). In 2013, the said intention had been materialized and put into force. As reported by Chip (2013), Honda had shifted the logistics of its vehicles components' from trucks to rail after a few previous attempts made. Honda saw a few important advantages that will benefits the company in the long run including the reduction in transportation cost, shortened transportation time and the reduction of Honda's carbon footprint which so happened to be among Honda's target in years to come (Chip, 2013). Based on the schedule of shipments by Honda through Nittsu Transport Service (M) Sdn. Bhd. as the freight forwarding agent, in 2014, at least three rail shipments were being made every month from Sungai Way in Malacca towards Bang Sue, Bangkok, Thailand and three other locations. Two different railway operators from two different countries, namely KTMB in Malaysia and SRT in Thailand, affected the journey that took two days to complete. As has been mentioned by Royal Malaysian Customs office in Padang Besar, in 2014, the shipments of vehicles parts by Honda is so significant to the extend that, by measuring the volume based on taxes, they are the highest contributor towards tax collection for trades through railway in Padang Besar, Perlis, Malaysia.

Discussion

Referring to the history of SEA, it can be seen that previously railway industry was one of the economy player major key in establishing the economy for the British colonial government and after the colonial era, the country itself. Even

so, as time goes by, the importance of railway in SEA start to fade away as new modes of transportation start to play more vital roles in logistics industry. To enable the railway to stand another chance to emerge as one of the most important mode of transportations in the region, history has given the stakeholders of SEA region's railway sector some guidance on how, in the future, the railway industry's business should be planned. Based on the discussion earlier, it could be concluded that there are two different approaches possible that could be employed in order to revive the railway industry, namely by positioning railway transportation as connector and also as transporter.

Source of economy to source of economy (SOE to SOE)

The role of railway is manifested either through the uni-modal or the multi-modal transportation. In uni-modal and multi-modal transportation, the number of transporters involved is not as important as the categories of transporters involved as the latter is the main focus when categorizing the transportations into either uni or multi-modal mode of transportation. The concept of uni-modal transportation is centered on the principle that only one mode of transportation is used for the entire journey where else for multi-modal transportation, it involves the usage of more than one mode of transportation to complete the journey. According to Article 1 of the United Nations Convention on International Multimodal Transport of Goods (Geneva, 24 May 1980) (UNCIMTG), multimodal transportation has been defined as:

“...the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country”.

For SOE to SOE, the involvement of railway is direct, where it serves as the connector between those two sources of economy through the usage of both uni and multi-modal modes of transportation. Figure 4 below shows the details of SOE to SOE's categories for railway industry.



Figure 2. Categories of SOE to SOE

Based on Figure 2 above, it can be seen that as uni-modal mode transporter, the connecting role of the railway could come in either the role of connector of market to market or connector of resources to market for either passenger or goods or both. In the context of goods markets connector, railway plays the role of transporting goods from one point (market) to another – the operations of Honda between Malaysia and Thailand is one example on how the rail could be the connector between markets. In this case, it can be seen that by having two sources of economy, namely two Honda factories, the use of railway lines by Honda to carry vehicles parts' has brought forward the role of the railway sector as the key player of transportation for the goods concerned. For this particular movement, namely movement of car parts between Malaysia and Thailand, the idea of economy is by the movements of freight from one point of economy to another one, in which every single movement will generate profit that will enhance the economic developments for both place of origin and destination. Both ends of the shipments have economic interest towards another, which has enable Honda to book for railway services for both ways of shipments, as detailed in Table 1.

As for movement of passengers, connecting two markets could also be translated as connecting from one point of interest to another. An example of this is connecting Kuala Lumpur in Malaysia to Bangkok in Thailand. From this perspective, the connection is being done through the passenger trains. Tourism is one of the major contributors towards ASEAN economy as it contributed \$563 billion towards ASEAN gross domestic product (GDP) for 2017, an increase of 13.5% from the previous year that contributed \$301.1 for 2016 (World Travel & Tourism Council, 2017). From that data, 72% of the total income came from

leisure spending, whereby only 28% of it came from business spending. It shows that the number of transactions that were coming in from people travelling is quite high, which enable tourism to be one of the major contributors towards the economic development and makes destinations, especially vacation destination as a source of economy for the country.

In Malaysia, the timeline of railway history of this country has shown that during the British colonial era, the construction of railway had been done to enable the colonizer to transport raw materials extracted from then-Malaya to the colonialist's motherland. Over time, new railway lines were either built upon these old colonial era ones or added as completely new lines that better served the economic needs of the independent, developing country. Based on the map of the latest railway lines, as shown in Figure 5 below, it can be seen that the railway lines mostly branched out to seaports, connecting them to the other mode of transportation. The lines, which are in blue, are the original railway lines that exist from the colonial era. This is also another example of SOE to SOE, under the category of resources to market.

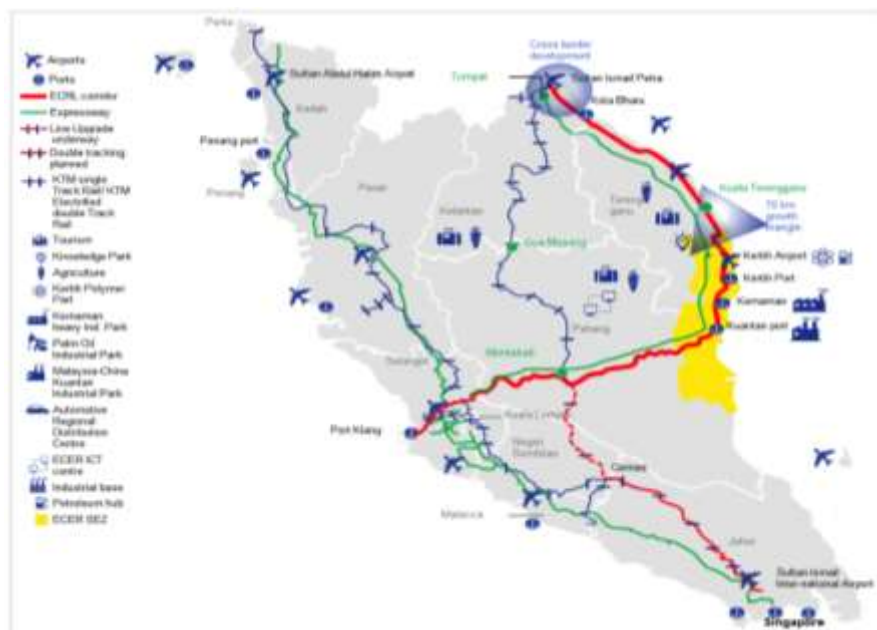


Figure 3. Malaysia railway lines (Suruhanjaya Pengangkutan Awam Darat (SPAD), 2015)

The important key factor under this category is the availability of the raw resources at the starting point of the journey which then are being transported to the market where their values will increase manifold after undergoing industrialization process. For example, tin that was mined from Malaya back then was transported to Europe for industrialization purpose. In Malaya, the initial value of tin is as raw material. But when it reached Europe, after it had gone through industrialization process, the value of tin, as components in various finished products increased accordingly. Figure 6 below illustrates how railway could be the connector between resources and market.

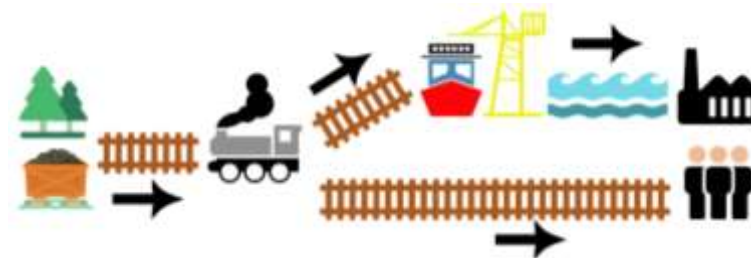


Figure 4. Illustration on resources to market movements

Port to port (P2P)

Referring to Table 2, a few different aspects have been looked into in comparing and differentiating between SOE to SOE and P2P approaches for railway industry. The first one is the factors that influence profit generation for each type of connectivity. For SOE to SOE, as explained above, the main determinant of profit generation is the volume of the people using the railway as a mode of transportation to connect them from point A to point B. The railway exists to connect one ship to another (and thus volume of transported goods will be the main determinant for profit generation).

Table 1. Differences between SOE to SOE and P2P

ASPECT	SOE TO SOE	P2P
FACTOR INFLUENCING PROFIT GENERATION	As the transporter for goods and passengers	As the connector between ports
FOCUS TYPE OF MOVEMENTS	Carriage of passenger and goods	Carriage of goods
VALUE OFFERED	Connecting goods and passenger at a high volume with fairly low cost from one point to another	Transporting goods from one port to another to reduce timeframe of journey
TYPE OF JOURNEY	Mostly transit	Direct
ROLE OF RAIL	Main transporter (if involves multimodal transportation, other mode of transportation will be the subsidiary of the railway)	Subsidiary transporter (the train assists the sea transportation in completing the shipment)

The second difference is on the type of movements. P2P movement concerns only with the transportation of cargo and not others. But for SOE to SOE, the transportation may include both passengers and cargo. Thirdly in terms of values offered, for SOE to SOE, it offers simultaneous movements of people and cargo which are both at a lower cost and in a higher volume relative to other ways of moving people and cargo. In terms of cost to the users (passengers and shippers of goods), railway cost is quite low as compared to the other modes of transportation. In SEA, due to the nature of railway in the first place, in order to provide cheap mode of transportation, the travel cost for passengers is being put at a minimum level. As for P2P, it offers alternative transportation to reduce the travelling time for cargo. In SEA, the topographical peculiarities of the region had caused the longer travelling time for people and goods before the widespread advent of the cross-border railway systems. For example, if a ship wants to travel from Myanmar to Vietnam, it has to go around peninsular Malaysia, which ultimately costs them time. Instead of doing so, they can cut the travel time by using land bridge, namely transportation service provided by railway. Also, in terms of travelling, for P2P it is direct and would not stop at any stations, but it is different from SOE to SOE. For SOE to SOE, most of the movements will stop at a few stations since their way of movements is to connect one place of interest to

another. Figure 5 below illustrate the role of train in assisting sea shipments by becoming the transporter from one ship to another through ports.



Figure 5. Role of train in assisting sea shipments

Conclusion

In constructing railway lines to ensure that it is in line with the economic development in SEA, it is very important to see opportunities rather than possibilities. What makes it different between opportunities and possibilities is that in the context of concept of opportunities, the center of focus happened to be the ability to do something that is intended to be done. On the other hand, for possibilities, the focus happened to be on the occurrence factor. In other words, opportunities focused on the ability of the person to have grip and control over situation. For example, in investment field, a person could be said as owning an opportunity for investment if he or she owns the means to head to that direction, that is, to invest. He or she can either invest or not and the control is direct. Meanwhile, for possibilities, they sit outside the reach and control of a person. An example is the possibility of success in science experiment. It is out of the reach of the scientist in terms of control. For a scientific research to work it does not depend on the scientist, rather it depends on the circumstances of the experiment's subject matter, over which the scientist has no control upon. Possibilities could be illustrated as dependent variable from the point of view of scientific research or experiment. Table 3 shows the relationship between variables and the control owns by the scientist over them.

Table 2. The differences of variables in relation to scientist's control

Types of variable	Control of the scientist
Independent	Direct and controllable
Dependent	Uncontrollable
Controlled	Direct and controllable

Based on the data owned by ASEAN on the history of the railway industry in SEA, even though the volume is quite limited, still it can be said that it is the best starting point of railway economic development in SEA. Opportunities to develop in the future should be looked into from the perspective of regional history in order to see the capability of SEA to cope with the future that it is heading to. Ambitious plans or projects might jeopardize the possibilities of creating profit if no point of reference has been selected to be used as the starting point of direction that the sector wants to head to.

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