Connecting Kuala Lumpur & Singapore Through High Speed Rail Link

AsiaPacificRail 2013: Mainline Day

Mohd Nur Kamal, CEO of Land Public Transport Commission (SPAD)

14 March 2013
Kuala Lumpur – Singapore HSR Link

- SPAD is tasked by the Government of Malaysia to lead the HSR project study and project since 2011

- Prime Ministers of Malaysia and Singapore jointly announced the decision to proceed with the HSR between Kuala Lumpur and Singapore on the 19 February 2013 and described it as a game changer.

- Significant local and international press and media coverage on HSR
  - 109 articles¹ published in 10 days since announcement
  - 88% supportive of HSR

- The project has entered a new phase with active engagement with Singapore

¹ Articles in Malaysian, Singaporean and international mainstream media (including online papers) relating to the KL-Singapore High Speed Rail project
### Briefly about SPAD

- Established 3 June 2010, S.P.A.D. is responsible for planning, regulating and enforcement of laws and regulations related to the Rail, Bus, Taxi and Freight industry:

  - **Planning** – Master plan development to ensure comprehensive, integrated and sustainable public transport infrastructure
  - **Regulatory** – Monitoring and regulating standard performance of operators through licensing
  - **Enforcement** – Power to audit, investigate, suspend/revoke licenses, seize vehicles and penalise operators

### Key Achievements in the past 3 years

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="MRT_Corp.png" alt="MRT Corp" /></td>
<td>The largest infra project ever undertaken - a 51km urban railway network with 31 stations, forming the backbone of the Klang Valley’s public transport system, serving a population of 1.2 million - daily ridership 400,000</td>
</tr>
<tr>
<td><img src="Teksi_Rakyat_1Malaysia.png" alt="Teksi Rakyat 1Malaysia" /></td>
<td>Teksi Rakyat 1Malaysia is a nationwide initiative to improve the safety of taxi passengers by alleviating the burden of taxi maintenance costs to the drivers</td>
</tr>
<tr>
<td><img src="Free_bus_service.png" alt="Free bus service" /></td>
<td>Free bus service introduced in August 2012 on 2 routes circling the KL CBD area</td>
</tr>
<tr>
<td><img src="The_National_Land_Public_Transport_Master_Plan.png" alt="The National Land Public Transport Master Plan" /></td>
<td>The National Land Public Transport Master Plan is a long term programme, setting the vision and direction for public transport in Malaysia</td>
</tr>
<tr>
<td><img src="Rolled_out_an_insurance_coverage_programme.png" alt="Rolled out an insurance coverage programme" /></td>
<td>Rolled out an insurance coverage programme for 1.2 million students on school buses</td>
</tr>
</tbody>
</table>
Malaysia’s Holistic Transformation Programme

A broad-based programme of change to fundamentally transform the Government into an efficient and rakyat-centred institution.

6 Strategic Reform Initiatives (SRIs)

Policy measures that will make Malaysia more competitive

To achieve a higher income country status due to year 2020

Propelling Malaysia Towards Becoming A High-income Developed Nation
KL – Singapore High Speed Rail is part of Malaysia’s effort for 2020

GOAL:

- To transform Malaysia into a high-income economy with a GNI of just over RM1.7 trillion in 2020
- GNI per capita to raise beyond RM48,000 or USD15,000 by 2020
  - 31% expected to be delivered by the EPPs;
  - 10% through multiplier effects
  - 33% through business opportunities
  - 26% expected from other non-NKEA sectors

Entry Point Projects

1. MNC Attraction
2. Talent Attraction
3. HIGH SPEED RAIL
4. MY Rapid Transit
5. River of Life
6. Greener KL
7. Iconic Places
8. Pedestrian
9. Solid Waste Management
10. Sewerage – Non River
SPAD began working on a pre-feasibility study in 2011 and proceeded with a more rigorous feasibility study in 2012. The findings of these studies have remained consistently positive.

The study evaluates the feasibility of a HSR link taking into considerations local conditions and needs, with input/feedback from all stakeholders; which is then refined and tested against international benchmarks and technical experts.

The study divided the assessment into 3 levels – focusing on documenting the anticipated impact on project, transport industry and national levels.
Malaysia is ready to proceed further

**Key question**

*Is HSR feasible economically, socially and politically?*

- Comprehensive/ focused on key areas
- Test for red flags/show stoppers
- Lower level of proof vs. feasibility
- Confirmation of pre-feasibility analysis at detailed level
- Detailed risk analysis
- Higher level of proof

---

**Phase 1A:** Pre-Feasibility study

**Phase 1B:** Feasibility study

- 2-3 months
- 12 months

---

**Phase 2:** SG engagement & Tender Process

**Phase 3:** Construction & Implementation

**Phase 4:** HSR operations

- 12-24 months
- 4-5 years
- ~50 years

---

Completed

Today

2-3 months → 12 months
Identifying Need for HSR

- **Mobility and market demand**
  - Trips to more than double by 2060
  - Road congestion to severely worsen
  - Future investment needed, especially on road expansion, to cater to demand
  - Rail market share is small relative to other markets (e.g. >50% for Paris – Marseille and Taipei – Kaohsiung)

- **Implications**
  - HSR could fulfil future transportation demand
  - Economic returns such as GNI impacts, job creation, multiplier benefits, increase business activities and regeneration

- **Additional benefits**
  - National and social benefits
  - Environmental benefits
HSR KL-Singapore – Key Concepts

- **7 Stations**
  - 2 Terminus stations (Kuala Lumpur, Singapore)
  - 5 Transit stations (Negeri Sembilan, Malacca and 3 in Johor)

- **Operations**
  - Express, with a journey time of 90 minutes
  - Transit, with a journey time of 120 minutes

- **Speed**
  - Expected to run at 300 km/hour or faster (however average speed will be lesser due to stops or slower speed at stations), on par with many of the HSRs in the world

- **Alignment**
  - Developed a baseline alignment but remain confidential at time of writing

- **Technology**
  - Double track on standard gauge
  - Proven high speed technologies
  - Passenger dedicated line
Wider Economic Benefits

- World Bank Beijing Office highlighted that there is a wider economic benefits that span beyond the conventional cost-benefit analysis.

- The methodical approach piloted by World Bank has shown quantitative measurement (that was not done before) of these wider benefits as a result of HSR promoting a larger and better connected markets.

- The quantification uses ‘Economic Mass’ or agglomeration, where HSR can increase the economic value by increasing mobility and accessibility of an area/city.

Excerpts of World Bank Paper

“Wider economic development benefits of high speed rail projects are significant and are worth considering in the evaluation of such programs, in addition to traditionally measured direct transport benefits...”

“...benefits for several HSR projects, and has found them to be significant - of the same order as, but additional to the direct transport benefits that are traditionally measured.”

“...is also evident in the development of high speed rail (HSR) in China, where national and provincial governments stress the importance of regional economic development in almost all feasibility studies”...

Experiences in Japan, France, Germany and the UK have shown that HSR systems, if leveraged properly, have the potential to catalyse development of cities and enable clusters which benefit from the economics of agglomeration.

HSR as a whole has tended to offer all-inclusive benefits for the nation and cities in between.

Below are examples of Lille and Shin-Yokohama cities that have done well after HSR arrived.

**Wider Economic Benefits – Other Case Studies**

**HSR unlocked opportunities in region**

**Lille, France: London-Paris HSR, 1994**
(London 90min, Paris 60min)

<table>
<thead>
<tr>
<th>Year</th>
<th>Inhabitants of Lille (’000)</th>
<th>Employment in Lille</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>172</td>
<td>148</td>
</tr>
<tr>
<td>1982</td>
<td>168</td>
<td>143</td>
</tr>
<tr>
<td>1990</td>
<td>172</td>
<td>138</td>
</tr>
<tr>
<td>1999</td>
<td>212</td>
<td>138</td>
</tr>
<tr>
<td>2006</td>
<td>226</td>
<td>151</td>
</tr>
</tbody>
</table>

**Shin-Yokohama, Japan: Tokyo-Osaka HSR, 1965** (27min)

<table>
<thead>
<tr>
<th>Year</th>
<th>Inhabitants of Shin-Yokohama (Millions)</th>
<th>Employment in Shin-Yokohama</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>1.4</td>
<td>0.5</td>
</tr>
<tr>
<td>1965</td>
<td>1.5</td>
<td>0.7</td>
</tr>
<tr>
<td>1970</td>
<td>1.9</td>
<td>0.9</td>
</tr>
<tr>
<td>1980</td>
<td>2.8</td>
<td>1.1</td>
</tr>
<tr>
<td>1990</td>
<td>3.2</td>
<td>1.4</td>
</tr>
<tr>
<td>2006</td>
<td>3.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Wider Economic Benefits – Other Case Studies

**Broader benefits achieved**

**Shinkansen line:** Chiba - Tokyo-Yokohama HSR, [year]

- Yokohama became the biggest biotech cluster in Japan

**Preconditions for success**
- IT and Biotechnology set as priority industries
- Set up Yokohama Science Frontier with incentive programs to relocate head office and R&D
- Attract and create talent pool with Yokohama Join Research Center

**Shin-Yokohama, Japan:** Tokyo-Osaka HSR, 1965

- Strong employment growth and inhabitants in Shin-Yokohama

**Preconditions for success**
- Clear prioritization of key industries (i.e., IT and Biotechnology)
- Integrated set of policies to attract businesses and talent (incentives for R&D centers, etc)
- Strengthen position as Japan’s port city

**Lille, France:** London-Paris HSR, 1994

- Strong employment growth and inhabitants in Lille

**Preconditions for success**
- Creation of 74 ha Euralille district, the ‘temple to the tertiary’, which combines commercial, office, green spaces, housing, hotels & public facilities in 1990

**Puertollano, Spain:** Madrid-Seville HSR, 1992

- Limited investment geared towards railway station

**Preconditions for success**
- Clear prioritization of key industries (i.e., IT and Biotechnology)
- Integrated set of policies to attract businesses and talent (incentives for R&D centers, etc)
- Strengthen position as Japan’s port city

**Vendome, France:** (100km from Paris): Paris-Bordeaux HSR, 1989

- Technology park did not materialize therefore limited job creation

**Preconditions for success**
- Creative 74 ha Euralille district, the ‘temple to the tertiary’, which combines commercial, office, green spaces, housing, hotels & public facilities in 1990

**Missed opportunities**
- Station location selection highly driven by political agenda instead of project economics
- No integrated plan to capitalise on HSR stop until 2006

**Missed opportunities**
- Town with small original population could have been planned and shaped with greater freedom
- No integrated plan to take advantage of lower cost of land and construction
Proposed HSR Alignment Expected to Spur Development

Singapore terminus to be jointly discussed at G2G level.
An important outcome of the HSR socio-economic development plan will be a set of sector priorities across the HSR hubs and targeted incentives and policies

Greater KL

Business and financial services
Home to regional HQs of MNCs from the financial and business service sectors under the 100 MNC programme by InvestKL. Supported by The Tun Razak Exchange (TRX), it is poised to be a catalyst for Kuala Lumpur to be a leading global centre.

Seremban

SME TechValley
Ambitious plans to develop a 1000-acre TechValley in Sendayan attracting SME manufacturing and research investments in the areas of sustainability, green manufacturing, biotechnology.

Melaka

Tourism and Health Tourism
Melaka represents a hub of tourism and health tourism. Its reputable medical centers, experienced specialists, proximity to Singapore and Indonesia combined with a charming historical atmosphere draws thousands of health tourists annually.

Muar

Consumer Goods Industrial Design
Leveraging its current position as the furniture manufacturing hub of Malaysia – potential to move upstream towards industrial design to serve local and regional furniture manufacturers.

Batu Pahat

Textile design and manufacturing
Home to over 300 garment and textile factories and producing 50% of exported textile from Malaysia. Batu Pahat has the potential to move upstream and become the center of design and manufacturing of textile for Malaysia.

Johor

Education
EduCity at Nusajaya is positioned to be a regional education hub and a destination for quality world-class education. It will be a fully integrated knowledge-based hub comprising world class universities, knowledge-based industry leaders, international schools and colleges, and exhibition amenities of world standing.

ILLUSTRATIVE
Opportunity to integrate effort between HSR socio-economic development plan and EPPs to accelerate the realization of broader benefits

<table>
<thead>
<tr>
<th>Example of Tourism and healthcare-related EPPs</th>
<th>Related stations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tourism</strong></td>
<td>Kuala Lumpur</td>
</tr>
<tr>
<td>EPP 7: Target new and enhance existing international events</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 9b: Develop and propel golf tourism for high yield tourists</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 10: Establish Malaysia as a leading Meetings, Incentives, Conventions and Exhibitions (MICE) destination</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 12: Improve rates, mix &amp; quality of hotels catering for high yield tourists (4-5 star hotels)</td>
<td>✔️</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Healthcare</strong></th>
<th>Kuala Lumpur</th>
<th>Negeri Sembilan</th>
<th>Melaka</th>
<th>Johor</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPP 4: Reinvigorate healthcare travel industry through better customer experience, proactive alliances and niche marketing</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 2: Create a supportive ecosystem for clinical research</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 3: Transform the pharmaceutical industry by tapping on the generics export opportunities</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 7,8,9,10,12,13: Build an ecosystem for manufacturing of high value medical device, medical furniture, and products</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Manufacturing and electronics</strong></th>
<th>Kuala Lumpur</th>
<th>Negeri Sembilan</th>
<th>Melaka</th>
<th>Johor</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPP 3: Increase the number of integrated circuit design firm</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 9,13,15: Promote manufacturing of electronics equipment (e.g. LED, automation equipment, and home appliance)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Retail and wholesale</strong></th>
<th>Kuala Lumpur</th>
<th>Negeri Sembilan</th>
<th>Melaka</th>
<th>Johor</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPP 1: Increase large format stores (i.e. hyperstores, supermarket within department stores)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 13: Develop big box boulevards (integrated retail experience) targeted for nationwide</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Education</strong></th>
<th>Kuala Lumpur</th>
<th>Negeri Sembilan</th>
<th>Melaka</th>
<th>Johor</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPP 8,9,10: Develop education discipline cluster (e.g. health science, advanced engineering, hospitality, games)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>EPP 7,11: Scale up international schools nationwide and launch fully integrated education hub in Iskandar</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

By leveraging existing EPPs, three development hub can be formed for Negeri Sembilan, Melaka, and Johor.
Learning for Malaysia

An illustration of a cluster concept in and around HSR station in Malaysia

- **WHOLESALE & RETAIL**
  - Large format stores
  - Big box boulevards

- **EDUCATION**
  - International schools

- **PREMIUM RETAILERS**

- **HSR STATION**

- **HOME APPLIANCE MANUFACTURING**

- **ELECTRONICS & ELECTRICAL**
  - Manufacturing of electronics equipment

- **LED MANUFACTURING**

- **SOLID ELECTRONICS MANUFACTURING**

- **URBAN PUBLIC TRANSPORT**
  - Multi-modal transport hub

- **BUSINESS CAMPUSES**

- **BUSINESS SERVICES**
  - Globally competitive outsourcers

- **LOW INCOME HOUSEHOLDS**
  - Affordable housing

- **INTERNATIONAL SCHOOL**

- **HIGH-END RESIDENTIAL**

- **OFFICES**

- **LARGE FORMAT STORES**

- **SHOPPING BOULEVARD**

- **INTERNATIONAL SCHOOL**

**Artist illustration**
Learning for Malaysia

- The improvement of transportation means is not the sole push factor, rather the potential for contribution to economic development is an equally tantalising prospect.
- Cities along the corridor stand to benefit immensely in terms of rise in quality of life, employment and talent opportunity.
- A concerted and well thought through plan is needed to capitalise on HSR much like other cities (shown earlier).
- HSR Socio-Economic initiative will be part of the larger programme operating in parallel to HSR project.
“90 minutes travel means you can cover more ground in a day and still find time for love ones”… possibilities are endless.

**Power of Agglomeration** - Connecting the 2 largest cities in South East Asia not only signify a closer than ever bilateral ties, it is also an opportunity to be stronger and more attractive as gateway to ASEAN.

The collective strength with seamless travel provide larger opportunity to access a larger demand market and talent pool.
Identifying Need for HSR

Transformational impacts from HSR typically outweigh the transportation benefits; a key driver for many countries

<table>
<thead>
<tr>
<th>Transport benefits</th>
<th>Japan</th>
<th>France</th>
<th>UK</th>
<th>Spain</th>
<th>Taiwan</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase connectivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce congestion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce travel time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transformational impact</th>
<th>Japan</th>
<th>France</th>
<th>UK</th>
<th>Spain</th>
<th>Taiwan</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger infrastructure multiplier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extend economic development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop local industries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhance regional/ international integration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve quality of life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>