



HITACHI
Inspire the Next

ASEAN Perspectives on the Social and Environmental Challenges of Designing and Implementing Public Transportation Systems

A Whitepaper of the 13th Hitachi Young Leaders Initiative

27 - 30 JULY 2015, MANILA, PHILIPPINES



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About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges with our talented team and proven experience in global markets. The company's consolidated revenues for fiscal 2014 (ended March 31, 2015) totaled 9,761 billion yen (\$81.3 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes power & infrastructure systems, information & telecommunication systems, construction machinery, high functional materials & components, automotive systems, healthcare and others. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

About Hitachi Asia Ltd.

Hitachi Asia Ltd., a subsidiary of Hitachi, Ltd. and established in Singapore in 1989, has offices across seven Asian countries (Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam). Focusing more than ever on the Social Innovation Business, Hitachi Asia's business includes information systems, power and industrial systems, R&D, international procurement and Centre of Excellence. For more information on Hitachi Asia, please visit the company's website at <http://www.hitachi.com.sg>.

Preface

This white paper is an objective representation of a series of discussions revolving around the challenges of inclusive mobility, particularly of public transportation systems in ASEAN member states. The exchanges of information and ideas transpired between and among students from across ASEAN and Japan, experts, leaders, and local communities. Divided into sessions and workshops, these discussions were implemented to fulfill a structured learning agenda designed specifically for the 13th Hitachi Young Leaders Initiative (HYLI).

The fundamental goal of this white paper is to direct the reader's attention to one of society's most basic requirements: public transportation systems that are affordable, efficient, and safe. Through the HYLI platform, it is hoped that the reader would find greater awareness and understanding of the issues that have been discussed, gain insight from the students' presentations, and be inspired to actively contribute solutions.

Readers include government bureaus, non-government organizations, colleges and universities, HYLI alumni, Hitachi's partners and customers, news media, and the general public who wish to use the contents for purposes of awareness and information gathering. Ultimately, this white paper reflects the voices of those affected by public transportation issues and those who wish to make a difference.

Message from Hitachi

On behalf of Hitachi, we would like to express our sincere appreciation to everyone who has made the 13th Hitachi Young Leaders Initiative (HYLI) a resounding success.

HYLI is Hitachi's flagship community relations program in Southeast Asia. As a socially responsible company, Hitachi was looking for the opportunity to initiate a unique, long term region-wide program - to reach out to local people and to make a difference in their lives. We held many discussions with stakeholders in ASEAN, and eventually decided on an education program nurturing the future leaders, which will play an important role in contributing to the overall growth of the region.

Conceptualized in 1996, we are proud to say that HYLI has remained true to its core mission over the past 20 years. The initiative has since cultivated over 300 alumni who play active roles in various fields including government agencies, public administration, private sectors and non-profit organizations. As HYLI progresses, our network of alumni and stakeholders will continue to grow further. We believe this whitepaper will strengthen the awareness and network among HYLI stakeholders and those who are interested in resolving social challenges.

Hitachi believes that every organization has the responsibility to do its part for the community. Moving forward, we will continue to address social issues through our Social Innovation Business and social contribution activities to propel growth and development in ASEAN to improve quality of life.



Mr. Akira Shimizu
Vice President and Executive Officer,
Hitachi, Ltd.



Mr. Ichiro Iino
Chief Executive for Asia Pacific,
Hitachi, Ltd.
Chairman, Hitachi Asia Ltd., Hitachi
India Pvt. Ltd.

About Hitachi Young Leaders Initiative

The Hitachi Young Leaders Initiative (HYLI) is Hitachi's way of fulfilling its commitment to society, particularly helping build future generations through innovative education. This community relations program seeks to identify and nurture potential Asian leaders among the best and brightest students in Asia, bringing them together to discuss regional and global issues with influential government officials, prominent business leaders, academics, and NGO representatives.

Through the years since its inauguration in Singapore in 1996, HYLI consistently provides the youth leader participants with a unique platform where they can broaden their perception, understanding, and perspectives while promoting Asian values

and sharing cross-cultural experiences with other delegates. Participating countries are from Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, and Japan. Each country is represented by up to four university student delegates who were carefully selected as recipients of this unique program.

Prior to selection, each candidate was required to meet certain criteria. They have to be currently studying as an undergraduate or graduate student in a college or university. They must be fluent in English, have a keen interest in regional and global affairs, and possess strong leadership abilities as well as good track record in academic excellence and extra-curricular activities or community work.

13th HYLI Learning Agenda

1 AWARENESS AND APPRECIATION

- Pre-Forum Infographic and Essay
- Speaker Presentations

2 ENGAGEMENT AND REFLECTION

- Field Interviews
- Panel and student discussions

3 COMMITMENT AND CELEBRATION

- Commitment Statement
- Cultural Performance

The 13th HYLI was held at New World Hotel in Makati City, Philippines, from July 27-30, 2015. A student selection panel chose 31 students as official delegates from the participating countries. These students were divided into four groups, with each group having at least one representative from every participating country. Every student worked with their respective groups from day 1 until the culminating activities to complete the HYLI learning agenda.

This learning agenda is designed to address key issues surrounding public transportation. For the 13th HYLI, discussions and activities revolved around the central theme: *Social and Environmental Challenges of Designing and Implementing Public Transportation Systems in ASEAN*. From this central theme, three sub-themes directed the panellists and the students toward specific, focused and productive sessions: *A Snapshot of the Current State of Urbanization and Sustainability in ASEAN*; *An Overview of the Infrastructural Options for People-centric and Environment-friendly Transportation Systems*; and *Shaping a Culture of Sharing: Lifestyle Changes for Efficient Transportation*.

The 13th HYLI learning agenda is designed to help the students walk through key transportation issues in the region, eventually inspiring them to contribute to possible solutions. This learning agenda is divided into three pillars: Awareness and Appreciation, Engagement and Reflection, and Commitment and Celebration. These serve as guides in establishing a unique vehicle for the student delegates' education happening before the weeklong event (Pre-HYLI) until the last day of the 4-day HYLI Week.

1. AWARENESS AND APPRECIATION

The Pre-HYLI work marked the beginning of the Awareness and Appreciation pillar, intended to prepare the students for the HYLI week proper. During this period, the students were asked to prepare an essay pertaining to the central theme, with infographics to illustrate their dissertation. The essay allowed the students to have an in-depth view of past successes and failures from an analytical standpoint so that they can determine how they can become part of the solution. The infographics enabled the students to have a broader perspective of their respective countries' issues, which served as solid basis for sharing with fellow student delegates, mentors, and panellists in workshops and sessions during the HYLI Week proper.



Workshops helped students form their group proposals.

Awareness and Appreciation for the pervading issues continued with talks delivered by guest speakers for three days of the HYLI Week.



With the guidance of a moderator, speakers engaged with students and the general audience in panel discussions based on specific sub-themes. In photo are (from left): Prof. Dr. Danang Parikesit, Ms. Nana Soetantri, Mr. Arnel Casanova, and Mr. Cleto Bravo Gales, Jr.

2. ENGAGEMENT AND REFLECTION

Engagement and Reflection involved panel discussions with speakers after the session talks. During field interviews, the students were able to engage with stakeholders affected by the issues. They visited two villages of Gawad Kalinga (a non-government organization that provides homes and sustainable community living to impoverished Filipinos) where they were able to experience riding the tricycle, as well as interview tricycle drivers and residents of the villages. The students likewise learned about urban development, its advantages, challenges, and solutions by visiting Bonifacio Global City – one of the Philippines’ fastest growing business centers and modern residential communities.



Student delegates interviewed members of local communities as part of an immersion process.

The information that the students gathered from the panel discussions and interviews helped them form their own presentations for the culmination of the entire HYLI event. After their presentations, guest mentors engaged them with comments and feedback that the students can use as their guide in real world situations beyond HYLI.



Students presented their proposals at the culmination of HYLI Week.

3. COMMITMENT AND CELEBRATION

Commitment and Celebration happened on the final day of the event where the students affirmed the new knowledge and experiences they acquired through a pledge. These pledges expressed the students’ commitment to advocate what they have learned from HYLI. The students also presented various cultural performances that best represent their respective countries as part of the forum’s cross-cultural sharing objective. The students then shared a special dinner to cap the celebration.



More than entertainment, the cultural presentations per country was an opportunity for the students to share a preview of their local heritage, traditions, and lifestyles.

13th HYLI Opening Messages

The role of Japan as a strategic partner in Asia



MINISTER TETSURO AMANO
Minister and Deputy Chief of Mission
Embassy of Japan in the Philippines

Japan has long been a strategic partner of Asia in its bid to achieve inclusive growth. In fact, Prime Minister Shinzo Abe recently announced a proposal in partnership with Asian Development Bank (ADB) that will provide approximately \$110B for quality infrastructure investments in Asia over the next 5 years.

As a growth center of the global economy, existing infrastructure gap in Asia should be addressed. Pursuing quality as well as quantity of infrastructure by mobilizing both public and private finance is now the name of the game. Japan hopes that this proposed

partnership with the ADB would serve as a catalyst to draw more support from the private sector.

Hitachi is steadfast in making its contribution to the development of the ASEAN region by organizing this event. I know Hitachi will be able to motivate the future leaders of Asia in the field of transportation, energy, water, information, technology, among others. I sincerely hope that this young generation will continue to be inspired by innovators to develop creative solutions to address pressing issues in our society, and participate in nation building.

HYLI as a platform of learning for future leaders of ASEAN



HON. PAOLO BENIGNO AQUINO IV
Senator
Senate of the Philippines
3rd HYLI Alumnus

The delegates of the prestigious HYLI are the chosen few representing their country. I fondly recall representing the Philippines during the 3rd HYLI held in Malaysia in 1999. It was a transformative experience, meeting young trailblazers with such varied backgrounds and perspectives while learning from seasoned experts as well.

HYLI provides the opportunity for the students to step out of the box, out of the comfort zone, and return home with fresh eyes and a renewed mindset. This experience challenges us to be less insular, urges us to open our minds to issues and solutions from the different corners of our world. The HYLI experience is all about learning, enrichment, and exchanging of ideas.

The HYLI forum equips the delegates with data, insights, and best practices from all over the world so that the delegates can participate in public transport discussions. The entire forum helps generate ideas and concrete plans.

The delegates, with their massive potential and contagious idealism, have the opportunity to make a difference. All they have to do is to act, to contribute to the building of an ASEAN where prosperity is felt by all and where no one is left behind. It is our hope that they seize this opportunity to steer the future of our region toward sustainable, inclusive growth in the spirit of collaboration, innovation, and constant learning.

Executive Summary

Over the past decades, ASEAN countries have been experiencing dynamic growth especially within its urban cities. This rapid development is triggered mostly by population increase, making it a challenge to implement efficient public transportation systems. Since most countries in ASEAN have their own transportation system designed according to their current infrastructure setup, there is now a concerted effort to help each other in incorporating solutions that would lead toward ASEAN integration.

This became the center of discussion and discovery during the 13th HYLI, with students having the opportunity to interact with subject matter experts, decision makers, opinion leaders, and community stakeholders through dialogues, field immersion, and workshops. Armed with new information and experience, the students put their heads together to come up with their proposed solutions.

Keynote speakers Secretary Joseph Emilio Abaya, secretary of the Philippines' Department of Transportation and Communications, and Mr. Takehiko Nakao, president of Asian Development Bank, provided broader perspectives on the 13th HYLI's central theme: *Social and Environmental Challenges of Designing and Implementing Public Transportation Systems in ASEAN*.

Secretary Abaya shared the Philippines' plans as an example in attaining sustainable transport solutions. This includes non-road based transportation, government incentives for use of alternative fuels, and integration of technological solutions that would reduce social and economic costs. Mr. Nakao explained the key role that institutions like the ADB play in helping ASEAN developing member states through financial and technical assistance.



Students joined Day 1 speakers, moderator, and Hitachi executives for a photo opportunity.



Guest of honor and keynote speaker for Day 1, Secretary Joseph Abaya of the Department of Transportation and Communications (DOTC) of the Philippines (center), and Japan Embassy to the Philippines Minister Tetsuro Amano (left) each received a memento from Mr. Akihira Shimizu on behalf of Hitachi Ltd.



Students listened intently to guest speakers' presentations prior to session discussions.

Executive Summary



Students had the opportunity to ask questions in aid of their proposals.

Three sessions were dedicated to give separate focus on three important aspects of public transportation systems in ASEAN: urbanization and sustainability, people-centric and environment-friendly philosophies and solutions, and the need for a lifestyle change through a culture of sharing. These served as sub-themes in support of the 13th HYLI's key issue and central theme.

Nine guest speakers contributed their thoughts and experiences based on the specific sub-themes. Mr. Arnel Paciano Casanova (Bases Conversion and Development Authority), Ms. Nana Soetantri (Asian Development Bank), and Prof. Dr. Danang Parikesit (Indonesia Transportation Society) gave presentations based on the first sub-theme. Dr. Somprasong Suttayamully (Mass Rapid Transport Authority of Thailand), Mr. Nobukazu Nagai (Ministry of Land, Infrastructure, Transport and Tourism), and Mr. Jiro Yasuda (Hitachi Ltd. Rail Systems Company) delivered speeches based on the second sub-theme. Mr. Mohinder Singh (LTA Academy of Singapore), Mr. Laurence Cua (Uber Manila), and MA. Pham Thanh Tung (Ministry of Transportation Vietnam) all shared knowledge and information based on the third sub-theme.

Some important highlights that came out of the discussions from the first session involved designing future cities. This includes maximizing open spaces in consideration of the convenience and safety of all stakeholders. Inclusion and sustainability should also be given priority in future developments, given the problems seen in present conditions in terms of rapid urban growth.

In the second session, the speakers gave importance to railways as one of the major solutions. The relative success of railway systems in Japan was considered in creating a transit-oriented infrastructure.

The third session focused more on cultivating mindset and behaviour that welcome ride and road sharing. This is taking off from the increasing ownership of private vehicles, which is preferred by stakeholders as a primary mode of transportation.

Out of these presentations by the guest speakers, plus the advantage of having a first-hand experience through field activities, the students were able to form their own proposals for efficient transportation systems.



Students answered questions about their proposals and gathered feedback from mentors after their presentations.

The first two groups were given the opportunity to work on ideas based on the second sub-theme. In essence, both groups agree that the welfare of the stakeholders is important when promoting the use of public transportation. Unfortunately, the poor condition of public facilities and the unfavorable infrastructure systems are forcing people to choose private vehicles instead. To convince them to consider using public transportation facilities, the students proposed transport hubs, environment-friendly resources for vehicles, feeder systems, and integrated IT solutions.

Working under the third sub-theme, student groups 3 and 4 pointed to poor infrastructure, lack of coordination between government and private sector, inaccessibility of proper information, and traffic congestion as the main reasons why society must appreciate the need to adopt a culture of sharing. Three key solutions came up during the students' presentations: incentives by government to private companies for ride sharing promotion; mobile app development and big data analytics to provide the public with the right information; and telecommuting to reduce the use of transportation and decongest the roads.

On the final day of the forum, the students expressed their appreciation of the whole experience and the new knowledge they have acquired. They realized that while they come from different cultures, they can still celebrate their differences and turn these into learning opportunities. The students made a pledge to fulfill their significant roles as future leaders in providing solutions to important issues that ASEAN is facing, and will face in the years to come.



Delegates from the Philippines declared their pledge before fellow delegates.

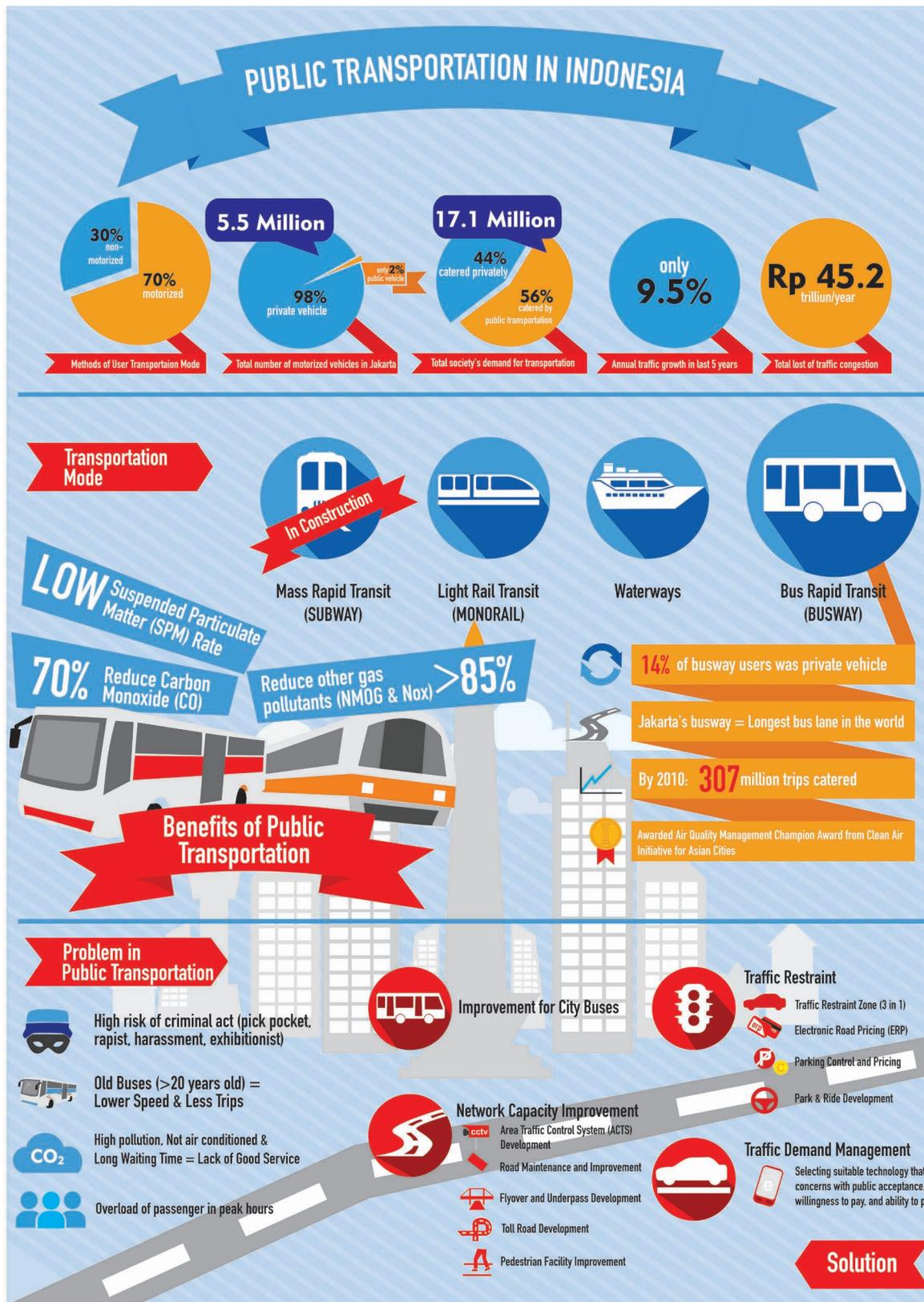
Key Issues

Public Transportation Challenges Across ASEAN Countries

As ASEAN heads toward full economic integration, there is now more emphasis on the importance of efficient transportation systems to facilitate better mobility of people, goods, and services. Thus far, ASEAN has stayed on track with its agreements on transport facilitation to realize an ASEAN Economic Community (AEC). However, the issue surrounding the social and environmental aspects of building more efficient public transportation systems remains real for commuters and motorists in the region especially since most ASEAN countries have been experiencing economic growth spurts.

Each participating country in the 13th HYLI has its own share of issues with public transportation systems and infrastructure, which were addressed during the three sessions. In sharing their own research and knowledge about their respective countries' issues, the students revealed that certain problems are similar among countries, thus opening the opportunity for comparable solutions. The following infographics summarize each country's past, current, and projected public transportation situations. These have been produced by the student delegates based on their own research and creativity.





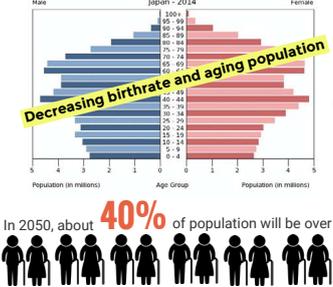
Indonesia is burdened by old buses that need repair. Commuters are also threatened by high incidences of crime inside public transportation. Overloading of passengers during peak hours is also a challenge.

Presented by 13th Hitachi Young Leaders Initiative Japan Team

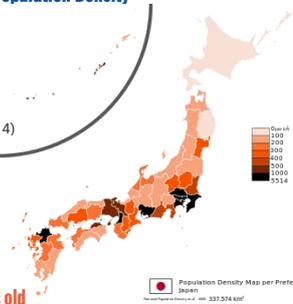
PUBLIC TRANSPORTATION in JAPAN

General Information of Japan

FEATURES AND CHARACTERISTICS



Population Density



Population concentration

More and more people come into the big cities such as Tokyo, Osaka, Nagoya.



Lifestyle × Public Transportation

In the urban areas, people are packed in trains during rush hour. Some rail road companies hire staff to push people into the trains!!

Urban Areas



Complex train system and station name

Traveling by train in Tokyo can be complicated especially for foreign tourists.

Long Distance Commuting



Rural Areas

In contrast to urban areas, rural areas lose their public transportation due to depopulation. This problem hits elderly people in rural areas.

70% of scheduled buses are in the red.

9000km of bus service has been eliminated. (TOYO KEIZAI ONLINE 2009, March 4)



Transportation Disparities

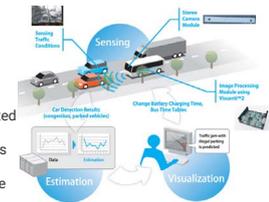
The number of elderly people who lost their access to shopping facilities are...



Technology × Public Transportation

Information and Communication Technology is to support and provide our convenient society. Those technologies are big part of the Japanese transportation system.

Big Data could be used like this



Big data is the concept of aggregated data which has enormous and also complex information. They happen everywhere in the world and keeps increasing infinitely(∞). Market size of big data in Japan is estimated \$444M.

http://www.toshiba.co.jp/its/railwayssystem/jp/products/evbus/

Shinkansen

bullet train - is a network of high-speed railway lines in Japan operated by four Japan Railways Group companies

“ Since the service started in 1964 they have no accident for 50 years ”



334 million people used Shinkansen (2013)

Shinkansen is a network of high-speed railway lines in Japan operated by four Japan Railways Group companies. This is one of the main important transportation system in Japan. There are six full-length lines and two short-length lines in Japan



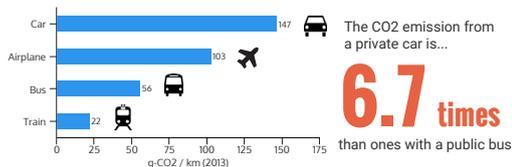
Recorded world's fastest speed **603 km / hour**

Environment × Public Transportation

Speaking of public transportation, we have to think not only about speed and price for ourselves but also how friendly to our earth. It is key to let people especially in the local use more public transportation than own private car in term of CO2 emission.

CO2 emission in Japan by transportation

CO2 emission / traffic volume (a passenger)

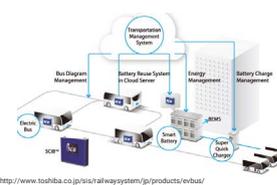


Smart City Concept

Smart city uses ICT to enhance the quality and performance of urban services, to reduce costs and resource consumption, and to engage more effectively and actively with its citizens.

They are planned to realize the efficient transportation system and traffic, photovoltaic power and wind generation and waste and health care connected among every factors. Smart city is in preparation for Oly 2020.

Electric Vehicle(EV) Bus



“ It is so called... the city caring for environment ”



There is very high usage of trains in Japan, especially in urban areas. During rush hour, passengers have to be pushed and crammed inside the train to accommodate all of them. On the other hand, the Shinkansen network of bullet trains proved it could reduce accidents and move passengers at the fastest time possible.

Key Issues in Public Transportation MALAYSIA

Car Ownership

The ubiquity and preponderance of private vehicles as the primary mode of transportation stands as a considerable barrier to the effective implementation of public transportation systems.

93% Highest in South East Asia and 3rd highest globally

of households own at least one car

57% Highest incidence globally

of households own multiple cars

due to **growing middle class** + **cheap and accessible loans for cars**

Urbanization and Traffic Congestion

Current infrastructures are challenged by the shift in population, simultaneously impacting the economy.

Urban population grew by 3% in three years

As urbanization grows rapidly, public transportation infrastructures cannot meet the increased demand. As a result, the use of cars proliferated to compensate, in tandem with other contributing factors.

Traffic congestion account for **1.1 - 2.2%** of GDP (2014)

Residents of Greater KL spend **250 million hours** a year stuck in traffic

Use of Public Transportation

Light Rail Transit (LRT) systems and buses constitute the primary means of public travel. However their use is hindered intrinsically and extrinsically, and their lack of use also imposes a financial burden.

Commuters who use public transportation

Hong Kong	89%
Singapore	62%
Malaysia (Klang Valley)	17%

Where in Malaysia

constitutes the percentage out of 7.23 million daily trips of which **4.17%** are daily frequent users

Circumstances surrounding the state of Malaysia's public transportation can be explained through a number of factors

- lack of integration
- inadequate service
- lack of active promotion
- negative public attitude

Major rail links costs up to USD 3 Billion

STAR LRT	~1200
PUTRA LRT	~800
KL Monorail	~400
Express Rail Link	~300

Ramifications:

Given the lower ridership of these systems, it is more difficult to implement significant improvements, keeping in mind of the costs

- Heavy financial burden on government and developers
- Cost recovery after implementation is limited

Environmental Challenges and Energy Use

Light Rail Transit (LRT) systems and buses constitute the primary means of public travel. However their use is hindered intrinsically and extrinsically, and their lack of use also imposes a financial burden.

The lack of diversity in energy sources indicates a need to seek alternative energy sources and electric based transportation.

Social Challenges

Social challenges in the form of public attitude towards public transportation is furthermore an issue that needs addressing. The general ambivalence and to an extent, stigmatization of public transportation remains a problem.

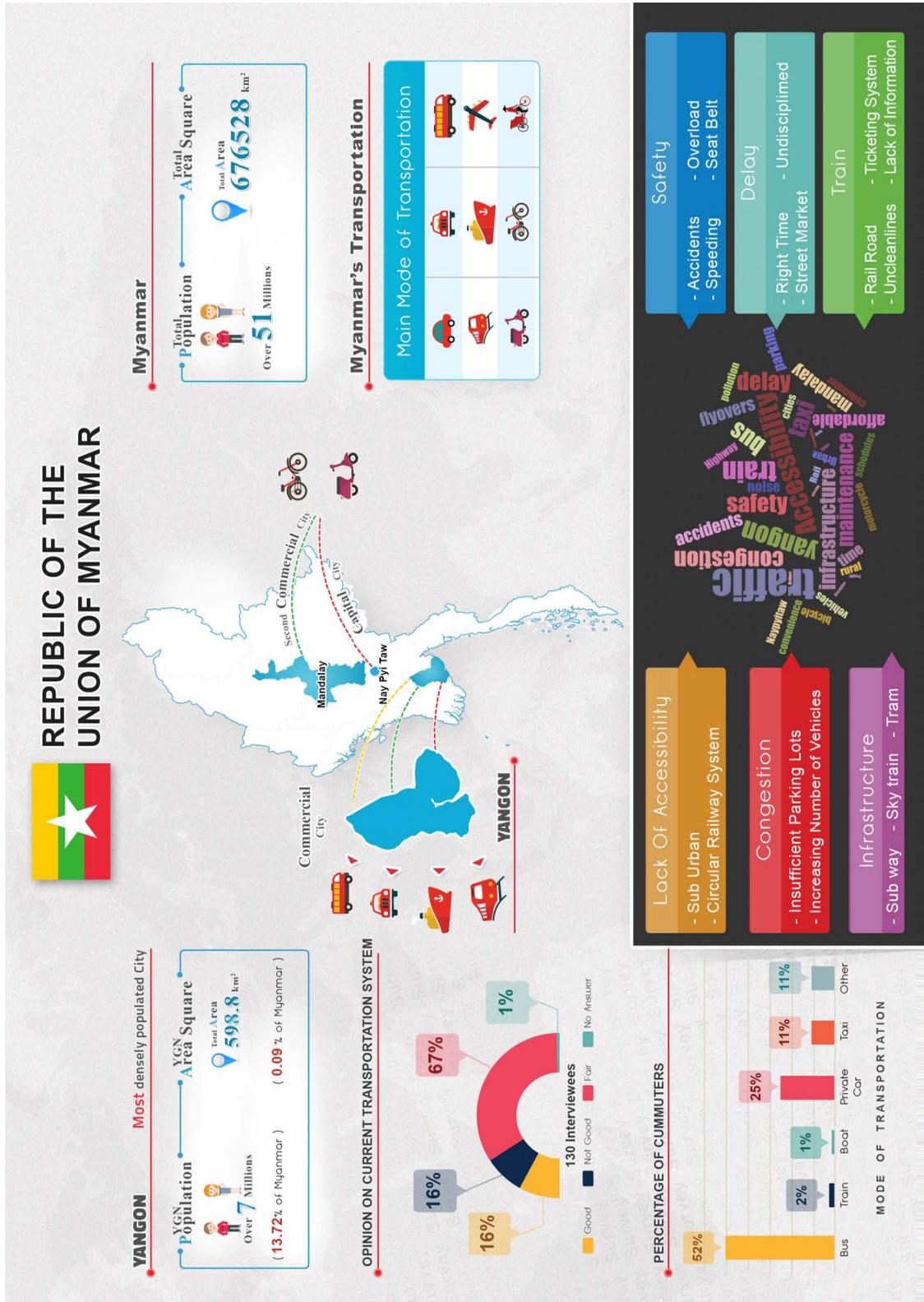
Cars are important symbols of status

Low awareness on impact and damage caused by motorisation

High reliance on cars with little practice of carpooling

Public transportation linked to low socioeconomic status

In Malaysia, the main barrier to an efficient public transportation system is private vehicle ownership. Rapid urbanization has somehow affected the mindset of Malaysians, equating the use of cars with a high status in society. Even with the rise in population and increased demand for public transportation, buses and trains remain under-utilized.



The bus is the most widely used mode of public transportation in Myanmar. Majority of its population rated the country's current transportation system as "fair", citing congestion, lack of accessibility, and safety as some of the issues that need to be addressed.

ISSUES AND CHALLENGES OF PUBLIC TRANSPORT IN THE PHILIPPINES

• DOTC
Responsible for creating and maintaining transportation systems in the country.

• DPWH
Tasked to plan and carry out infrastructure plans of the government.

• MMDA
Coordinate 17 lgu's in metro manila for traffic management, waste management, disaster prevention among others.

• LTRFB (Under DOTC)
Responsible for implementing laws, policies for public land transportation

• LTO (Under DOTC)
Implements laws, policies for land transportation

MACRO VIEW

- The losses add up to **P576 billion** a year just for the economic cost of traffic on weekdays.
- By 2030, the Philippines stands to lose **P6 billion a day**.

PROJECTED GROWTH OF MOTOR VEHICLES IN THE PHILIPPINES FROM 2005 TO 2035 (IN NUMBERS OF UNITS)

WHO'S TO BLAME?

PROBLEMS WITH TRICYCLES

- A tricycle is composed of two components: **the motorcycle and the sidcar**. Regular ones can fit about 3 people inside. The motorcycle can accommodate 2 additional passengers.
- Over the years, sidcar designs even became **smaller and less safe** due to material minimization in construction.
- The usual minimum fare is presently at about **Php 10 per passenger** with increases per distance markers upon reaching the place covered by the minimum fare.
- Despite the health and environmental hazards that tricycles bring, the study found that the two cities continue to experience increase in tricycle population due to: (i) **high unemployment and absence of alternative livelihood**, (ii) **limited road network**, and (iii) **increase in commuting population**.
- The study also discovered that a majority (**70%**) of the drivers earned a daily net income of P100-P150 (\$1.80-\$2.70), leaving no incentive for the drivers to curb pollution (ADB, 2005).

PROBLEMS WITH THE JEEPNEY

- According to the National Center for Transportation Studies (2011) **70%** of the total person trips nationwide are done by means of public transportation. Of these, jeepneys comprise **39%** of all the trips with users coming from various income groups. (Bacero and Vergel 2009)
- On the average, Jeepneys operate around **100-150 kilometers daily**. (Gota 2014)
- Relative to the number of buses in the Philippines, there are approximately **8 jeepneys per bus in the country**.
- Jeepneys are assembled using an estimated **50-80% brand new and 20-50% surplus materials**, to which Japanese-made 4BC2 surplus or reconditioned second-hand engines are installed. (Bacero and Vergel 2009)
- Most of the jeepneys use either surplus or reconditioned pre-owned Japanese engines which are not compliant under Philippine laws, such as the Clean Air Act.

PROBLEMS WITH THE LRT/MRT

- Operates at **500,000 passengers/day versus 350,000 capacity**.
- Should have 20 trains during peak hours, but around **12-15 trains are only operating**.
- For unscheduled train removals, the number hit **290** in May, from 151 in January.
- 13 stations**: 5 are busy lines, while 2 stations don't serve as much as they are near the busy stations
- North Ave. to Araneta Center, Guadalupe, Taft Avenue) have **more people coming in than leaving** during the day when people are heading to work.
- At around **1pm**, the pattern for all of the stations flip, when people begin to return to their homes.
- Taft Avenue and North Avenue** are among the busiest stations, indicating that much of the workforce is already living beyond the reach of the MRT.
- 0.12%** as investment to rail

PROBLEMS WITH BUSES

- Bus A** is colored yellow & could stop at 8 terminals going north, and another 8 terminals going south. (40% of all Edsa Buses).
- Bus B** has the same amount of stops both ways, but has a different set of stations. (40%)
- Bus C** could stop at both terminals of A and B. (20%) and is slowest.
- Buses stops in their proper stations **only 1 in 6 times** it does a stop.
- In aggregate, as compute by Transportas Consulting Co. (2006), the overall load capacity of the buses is only a measly **51.3 percent** in the weekday, and a slightly lower **47.5 percentage in the weekend**.
- According to X. Edsa Buses, on average, has a fuel efficiency of **0.54L/bus-km** way above the recommended fuel efficiency for buses.

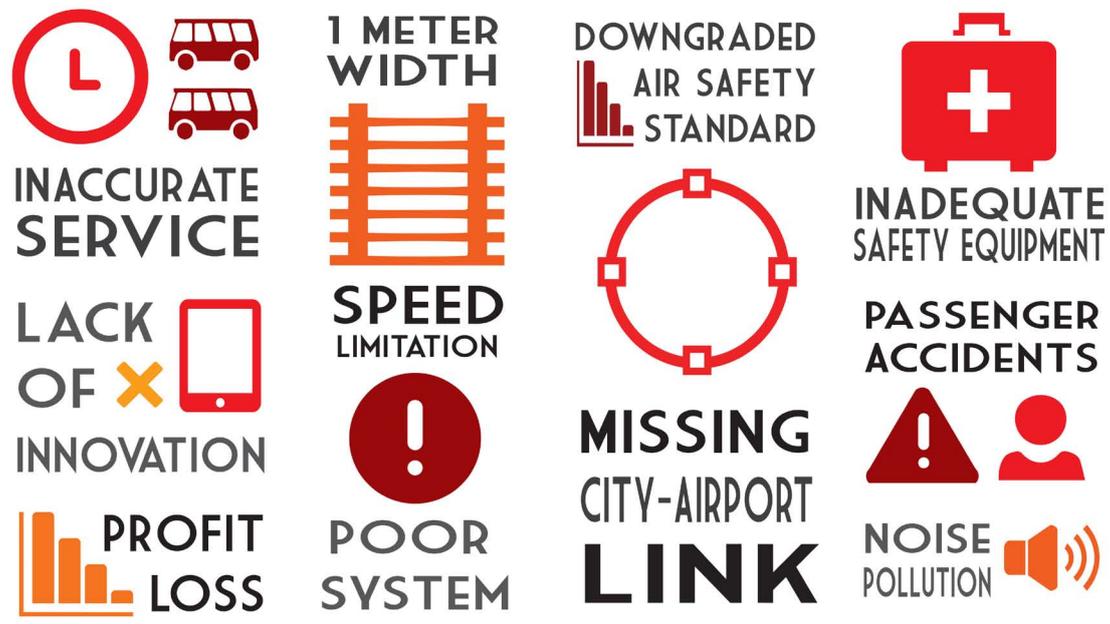
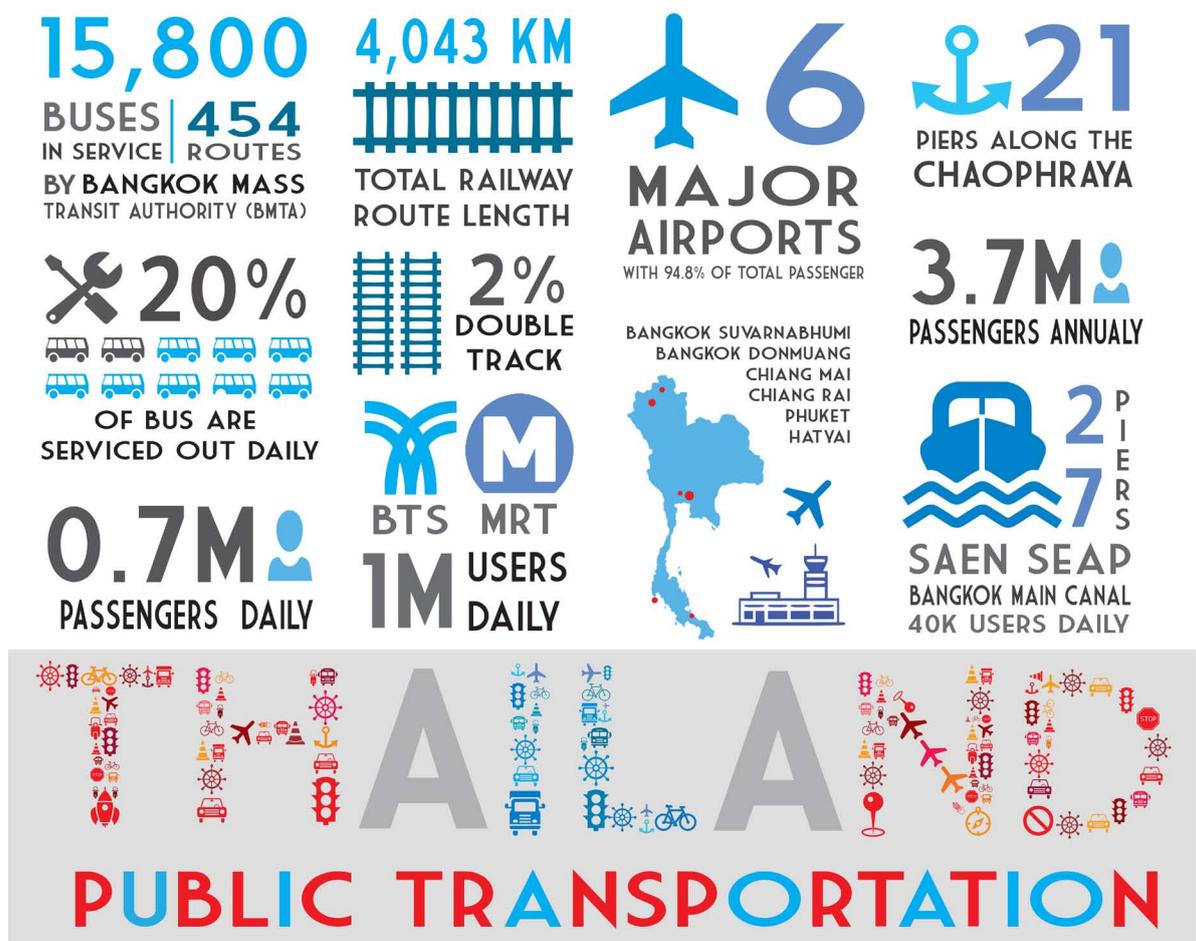
Rail, Water, Land and Air Transportation Statistics

ITEM	2007	2008	2009	2010	2011	2012
Cars	700,384	715,175	732,659	759,683	788,372	808,968
Motorcycle/Tricycles	2,059,850	2,560,504	2,559,997	2,841,646	3,206,255	3,440,777

Statistics on Railroad Accidents

	2010	2011	2012	2013
TYPE OF MV INVOLVED IN ACCIDENT	23,592	17,945	15,752	17,054
Bus	2,492	1,707	1,516	1,058
Truck	3,099	2,422	1,770	2,615
Automobile	10,457	6,973	5,428	6,035
Jeep	1,864	1,516	879	871
Tricycle	1,578	1,389	925	1,516
Motorcycle	3,543	3,665	3,712	4,715
Others	359	473	322	264
NO. OF PEDS INVOLVED IN ACCIDENT	874	575	479	1,241

Weekday traffic is the number one burden in the Philippines. This has caused the country more than P500B a year in terms of economic losses. Roads in Manila are clogged by private cars, buses, taxis, and jeepneys, especially during peak hours.



Thailand averages 3.7M passengers per year, with buses and trains as main modes of public transportation. Unfortunately, the people of Thailand believe that inaccurate service, poor systems, and lack of innovation need improvement.

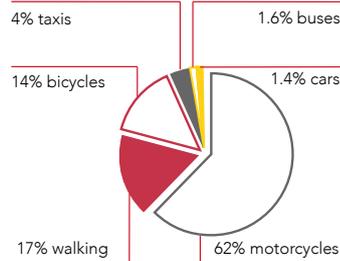


VIETNAM PUBLIC TRANSPORTATION LANDSCAPE OVERVIEW & CHALLENGES

Le Thi Cam Linh
Dinh Quang Noc
Dang Pham Thao Chi
Nguyen Dinh Dang Khoa

Vietnam is the easternmost country on the Indochina Peninsula in South East Asia.

- 90.5** million inhabitants (2014)
- 13TH** most populous country in the world
- 5.98%** GDP growth in 2014

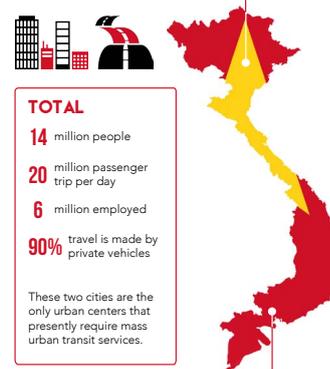


Overall

- 1) Vietnam has very limited supplies of public transport services.
- 2) There is very low reliance of public transport (bus) for mobility within the city.
- 3) The number of bus in Hanoi & Ho Chi Minh City (6,000) in each is not sufficient for the cities' population. For cities of similar size (Bangalore, India or Wuhan, China), the city operates with at least 9,000 buses.

Hanoi

PRINCIPAL ECONOMIC HUB



Ho Chi Minh

PRINCIPAL ECONOMIC HUB

Transportation Efficiency & Financial Investment

Bus is the only public transport service but utilization of city dwellers is extremely low at **1.6%**.

The number of **6,000** buses is far from being sufficient for cities of 7 million citizens, expecting to rise to 9 in the next 2 years.

Limited transportation affects the **MOST VULNERABLE SEGMENTS** of society: women, youth, the elderly, the disabled, and the very poor.

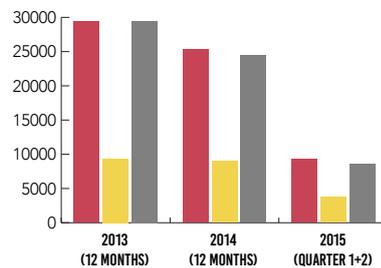
Fare revenues cover less than **60%** of bus operators' total cost. The rest is subsidized by government, causing significant burden on municipal finances.

Campaigns to boost ridership of public transport have achieved very little, increasing only between **2-5%** annually (2007 - 2010).

Metro Rail Train is under construction and expected to finish in late 2006 - 2007.

Motorbikes are the most common transportation. They provide flexible, on-demand, low-cost, door-to-door mobility.

Social Sustainability & Traffic Safety



- Number of traffic accidents
- Number of fatalities
- Number of people injured

Wearing helmet has helped increase citizen's awareness about traffic safety.

Traffic accident is a key cause of **HOUSEHOLD'S FALL INTO POVERTY** as they cope with medical expenses and lost income.

- To address the issue of traffic safety in Vietnam, **2 aspects need to be focused on:**
- 1) Improvement in safety of road infrastructure
 - 2) Adoption of long-term policies, laws and regulations that promote behavioral change of drivers and pedestrians.

Environmental Sustainability & Eco-centric system

Approximately **6.6M** motorcycles circulate Hanoi and Ho Chi Minh City daily, causing both primary and secondary pollution.

Automobile ownership rose from **131,000** (2001) to **500,000** (2012). Annually it increases by **13.5%**.

Traffic contributes to **70%** of total pollution nationwide.

90% of children under the age of 5 suffer from respiratory illnesses due to high emission level and deteriorating air quality.

COMPRESSED NATURAL GAS bus routine has been implemented in Ho Chi Minh City, at a limited scale.

Cost for building eco-centric infrastructure is generally **20-30%** higher than that of diesel. Thus, there is a lot of financial challenge.

CO	HYDRO CACBON	NO
90%	60%	50%

Vietnam's main mode of transportation is the motorcycle due to lack of available alternative public transport. The number of buses available to the riding public is insufficient. On the other hand, there is a significant increase in private vehicle ownership, with an average annual increase of 13.5% from 2001 to 2012.

ASEAN Perspectives

Social and Environmental Challenges of Designing and Implementing Public Transportation Systems

Efficient transportation infrastructure is considered essential as the ASEAN region braces for integration. Speakers shared their insights and perspectives about significant initiatives undertaken by the Department of Transportation and Communications (DOTC) and the Asian Development Bank (ADB) for the implementation of sustainable public transportation systems in the Philippines and the ASEAN region, respectively. The presentation served as a springboard for the succeeding panel discussions.





**SECRETARY JOSEPH EMILIO
AGUINALDO ABAYA**

Department of Transportation
and Communications
Republic of the Philippines

The essential strategy for sustainable transport development in the Philippines in the coming years is to invest in non-road based mass transportation systems such as railways, water-based options, and the relatively newer Bus Rapid Transit (BRT).

The Department of Environment and Natural Resources estimates that motor vehicle emissions cause 70-80% of air pollution in Metro Manila. Requiring public utility vehicles to shift to clean or alternative fuel and gradually encouraging private vehicle owners to reduce emissions will make an impact. The government prioritizes alternative fuel for public utility vehicles such as buses and

jeepneys. Incentivizing this shift will entice public transport operators to voluntarily use compressed natural gas, electric-powered hybrids, and other similarly powered vehicles.

Metro Manila is now rolling out e-jeepneys powered by electricity. ADB is helping introduce e-tricycles. Clean fuel requirements will be imposed for each new classification of public utility vehicles. All BRTs in the new system must be Euro 4 compliant to preempt the entry of conventional fuels into newer categories of public transportation. Air-polluting older vehicles from existing categories are being phased out. The age limit on buses is finally being implemented, with old trucks and jeeps to follow. Minimum carbon emissions in motor vehicles will help meet contemporary challenges in transportation development.

The promotion of non-motorized transportation or NMT will fill the need for short-distance travel, especially in urbanized areas. Cycling or walking accessibility can address the environmental challenges of transportation development. Making these activities convenient for the public by reconfiguring road space and sidewalks may ease congestion, lower traveling time, and improve air quality.

The need for intermodality, or interconnectedness, of transport facilities is more pronounced

for pedestrians and cyclists. Infrastructure development must be faithful to a people-centric philosophy. The convenience for a passenger to transfer from one transport facility to another should always be a primary consideration.

Train networks should always be interconnected and they should be easily accessible through other means of transport such as feeder buses. Development plans must consider the need for future development to preserve intermodal designs.

Seeking innovative solutions to transport problems with the use of technology is vital in the Information Age. Traffic and navigation apps like Waze reduce social costs such as losing time to traffic congestion. Ride sharing applications encourage car owners to leave their vehicles at home and also allow non-vehicle owners to commute in private cars. Sustainable transportation development in the future will work hand in hand with technology. People must welcome, encourage, and push for more innovation in the future.

Above all, good governance is key in building and implementing sustainable and efficient transportation systems. If resources are allocated correctly, the systems will work.

Joseph Emilio Aguinaldo Abaya is currently the 17th Secretary of the Department of Transportation and Communications of the Philippines. Prior to his appointment, Secretary Abaya was a member of the House of Representatives, representing the 1st District of Cavite, for three consecutive terms beginning 2004. Before Congress, Secretary Abaya was an officer in the Philippine Navy for 20 years.

He finished his elementary education in De La Salle University-Taft and his secondary education in the Philippine Science High School where he graduated Second Honorable Mention. He took up Electrical Engineering in the University of the Philippines-Diliman and received citations as a University and College Scholar.

After a year in UP, Secretary Abaya took and topped the entrance examination for the Philippine Military Academy. Later on, the government sent him to the US Naval Academy in Annapolis, Maryland where his stellar academic performance culminated in a Bachelor's Degree in Mathematics, graduating with distinction. On fellowship, he went on to finish a Master's Degree in Electrical Engineering in Cornell University in Ithaca, New York. Secretary Abaya earned his Juris Doctor degree from the Ateneo de Manila University and was admitted to the Philippine Bar in 2007.



MR. TAKEHIKO NAKAO
President
Asian Development Bank

Asian Development Bank (ADB) provides loans, grants, and technical assistance to developing member countries in Asia and the Pacific. Loans are financed from ordinary capital resources (OCR) and Asia Development Fund (ADF). Grants are offered to countries with limited capacity for debt repayment. Technical assistance includes capacity building, project preparation, and research for developing members. The transportation sector makes up over 32.6% of approved loans financed by OCR and 25.8% of loans from ADF in 2014.

Today, Asian countries make up 30% of the world's GDP. If it continues to grow at its current pace, in 2050 Asia will make up half

of the world's GDP. While Asia is a growth center of the world, poverty reduction in developing member countries is still the region's biggest challenge.

ADB's goal is to build a poverty-free Asia. It helps developing member countries improve living conditions and quality of life by supporting three complementary development agenda: inclusive economic growth, environmentally sustainable growth, and regional integration and cooperation. Core areas of operations are infrastructure, environment, regional cooperation and integration, finance sector development, and education.

As the region undergoes rapid change, ADB is adapting to meet new challenges by implementing the following:

- enhancing lending capacity
- streamlining procurement procedures by adopting a risk-based approach
- delegating authorities to Resident Missions
- establishing the office of PPP
- introducing a talent management initiative for staff performance
- workforce planning to allocate staff resources more efficiently
- strengthening private sector operations through more rational interpretation of equity headroom
- introducing a facility for small non-sovereign transactions
- adopting a new economic capital planning model

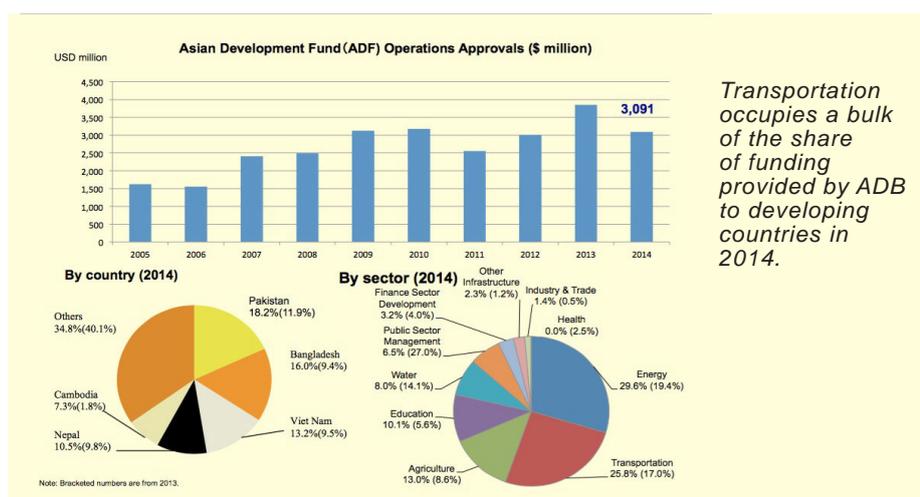
DISCUSSION WITH MR. TAKEHIKO NAKAO

Nuzzree W. Charasakonpong (Thailand): The fast growth of CLMV (Cambodia, Laos, Myanmar, Vietnam) has caused bottlenecks in hard and soft infrastructure. How can institutions like the ADB help in easing these bottlenecks?

Mr. Nakao: CLMV have opportunities for growth. These four countries face many challenges, especially Myanmar. Three years ago, most bank transactions there were not yet computerized. Now there are more support coming from international communities, including bilateral support, industrial investments, and support from the ADB and the World Bank. After they re-engaged through the international community, normalized relations with the ADB and the World Bank, and after the removal of sanctions from the US and other countries, they started growing fast. They are now able to address the bottlenecks by using all the internal and external resources available to them. But there are still so many bottlenecks: infrastructure and power are limited. Ports should be rebuilt. Soft infrastructure is also important. Education and training must be improved.

The key is good governance policies so they can have more tax revenues, get better policies on borrowing from abroad.

Growth and development in some countries were faster than expected. If bottlenecks are addressed by governments – with the help of the private sector and the international community – things can change very quickly in 10 years' time.



Mr. Takehiko Nakao was appointed President of the Asian Development Bank (ADB) and Chairperson of ADB's Board of Directors in April 2013.

Before joining ADB, Mr. Nakao served as Japan's Vice Minister of Finance for International Affairs and, previously, as Director-General of the Ministry's International Bureau. He also held high level positions with the Embassy of Japan in Washington D.C. and the International Monetary Fund, and has published extensively on financial and economic issues.

A Snapshot of the Current State of Urbanization and Sustainability in ASEAN

Session 1

The rise of the “Mega City” imposes a burden on government and other stakeholders in terms of sustainability and environmental challenges, increasing population density, aggravated traffic congestion, and the concentration of economic activity. This session aimed to develop a broad understanding of major issues surrounding urban development and public transportation from various disciplines as well as from local, national and/or regional perspectives.





MR. ARNEL PACIANO D. CASANOVA, ESQ.

President and CEO
Bases Conversion and
Development Authority
(BCDA) Philippines

More than 50% of the world's population is living in the cities. In an era of megacities, challenges in food security, climate change, congestion, lack of shelter, and even global terrorism can only be addressed by designing cities to be inclusive, sustainable, efficient, and safe.

The BCDA is developing Clark Green City, the Philippines' first green and smart metropolis. In the master plan is a walkable metropolis with bike lanes, wider pedestrian sidewalks, mass transport systems, and smart utilities. As part of an inclusive housing agreement with the Pag-IBIG Fund, the first thousand townhouses will be affordable even for the minimum wage earner.

In the Philippines, where upscale urban developments still exist side-by-side with slums, many daunting challenges remain for urban planners. City building is not only about infrastructure but shaping physical space to uplift human dignity.

The BCDA's success can be seen in the millions of people whose lives have been rebuilt after the devastation caused by the North Luzon earthquake in 1990, the volcanic eruption of Mt. Pinatubo in 1991, and the series of coup attempts in 1987 and 1989. The BCDA was born out of adversities

and was able to surmount them. As one of the major sources of funds for the military, remittances to military modernization from 2011 to 2015 reached Php8.9 billion and it surpassed the last 17 years of remittances, which is about Php8.2 billion. The BCDA was able to accomplish in four years more than what had previously been accomplished in 17 years.

The future of the metropolis is green, smart, disaster-resilient, and inclusive. Clark Green City will be a city in a farm with a place for everyone. Driven by innovation, it will be a city of human dignity marked with equality and sustainability.

Arnel Casanova has a diverse expertise in public-private partnerships, urban planning, public infrastructure and utilities, governance, social entrepreneurship, peace negotiations, and international relations.

He was appointed President and CEO of the Bases Conversion and Development Authority (BCDA) by President Benigno Aquino III in 2011. BCDA is a development corporation mandated by law to transform former military baselands into economic centers of growth.

He successfully led BCDA's legal team in all major property development projects and sound partnerships that have established vibrant economic districts such as the Bonifacio Global City in Fort Bonifacio, Newport City at the Villamor Air Base, and world-class infrastructure, the Subic-Clark-Tarlac Expressway.

He obtained his Master in Public Administration from Harvard University's Kennedy School of Government as a World Bank scholar and Mason Fellow. He graduated from the University of the Philippines earning degrees in Law, English, and Urban Planning.



MS. NANA SOETANTRI
Transport Specialist
Asian Development Bank

ASEAN's transportation landscape is changing. Many countries have more than doubled road networks in the last two decades, which has increased congestion in many of ASEAN's major cities.

A report on the growth of vehicle ownership by ADB and the Institute of Environment Engineering predicted that motor share of cars in Asia would outnumber that of public transportation and cycling for the first time in history by the end of the decade. The rate of increased private vehicle ownership will affect climate change, congestion, energy consumption, air pollution, and road safety.

When planned properly, transport can be a solution by creating access to remote areas. Urban planning can create a better living space. But changing people's mindsets over private vehicle ownership requires improving the environment in which public transportation exists.

Nana Soetantri is a Transport Specialist within the Sector Advisory Services of the Sustainable Development and Climate Change Department in Asian Development Bank (ADB). She supports Transport Sector Group, specifically on the development and implementation of ADB's transport sector policies and operational plans, including developing innovative approaches for infrastructure development. She is also ADB's anchor for internal knowledge management and external knowledge partnership on sustainable transport issues such as green freight, road safety, and road asset management.

Nana has over 15 years of experience in transport planning and development, traffic management, transport project management and construction, and road safety. She began her career in the Department of Transport, Energy and Infrastructure in Adelaide, Australia. She held various progressive roles, including Executive Officer to the Chief Executive. Prior to joining ADB, Nana was the Principal Transport Planner at Royal Automobile Association of South Australia (RAA).

ADB is managing massive urbanization issues in the region by identifying sustainable priorities. The work in the transport sector is guided by the Sustainable Transport Initiative operational plan, which addresses four key areas: urban transport; climate change; cross border transport, logistics, and road safety; and sustainability.

Beyond building better public transportation systems, government policies must support their actual operation. A good system is not sustainable without good governance and policies. Implementation, operation, maintenance, and funding must be part of the building plan.

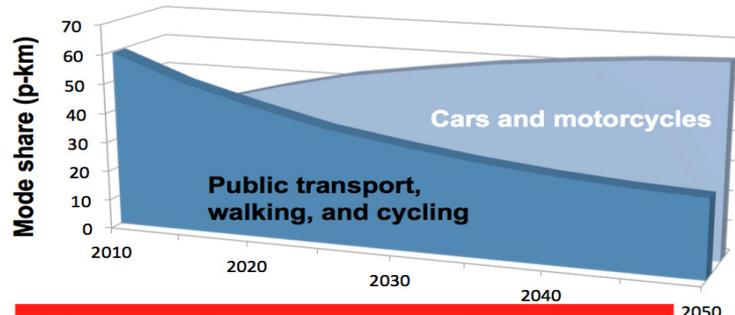
Forty-four of the ADB's 67 member countries are developing countries, considered to be low- and middle-income. To address their needs, they

require innovative business solutions and cost savings management through better coordinated planning and improvements in procurement and asset management.

The GDP in ASEAN cities will account for 84% of the global GDP, emit 70% of greenhouse gases, and house 64% of the population by 2050.

Can ASEAN afford to stay on its current course? Or will there be livable cities where everyone has access to affordable, safe, and comfortable transportation services and where owning a car or a motorcycle is no longer seen as a status symbol? Finding a way to reverse the trend of private vehicle ownership means delivering a better transportation system for ASEAN cities.

TRANSPORT UNSUSTAINABLE TRENDS



We need to reverse this trend

Source: ADB and IEA, 2011



It is projected that the number of private vehicles in Asia will exceed that of public transportation by the year 2050.



PROF. DR. DANANG PARIKESIT
 President
 Indonesia Transport Society

Fifty percent of the population living in cities and urban areas creates the wealth of 80% of the world. Opportunities for income drive people to live in cities.

As cities become more urbanized, they generate more wealth and more income. The peak of urbanization has been predicted to occur in 2030. Many statisticians believe that in 2050 the world's population will be stabilized. Planners and decision makers may have just 15 years to design urban areas for sustainable economic development.

Designing Asia's megacities pose new challenges. Most cities in Asia are mono-centric with very compact and high-density areas. Most have populations of up to 10 million and are considered megacities. Experts in East Asia are now looking at

urbanization in a different way than their counterparts in Europe or in the US. Asia will be the world's growth engine for the next 30 years.

A report by the World Bank in 2009 indicates that world development is defined by three criteria:

1. Density means more opportunities for growth.
2. Distance represents increased mobility.
3. Division refers to diversity and the thinning of economic borders.

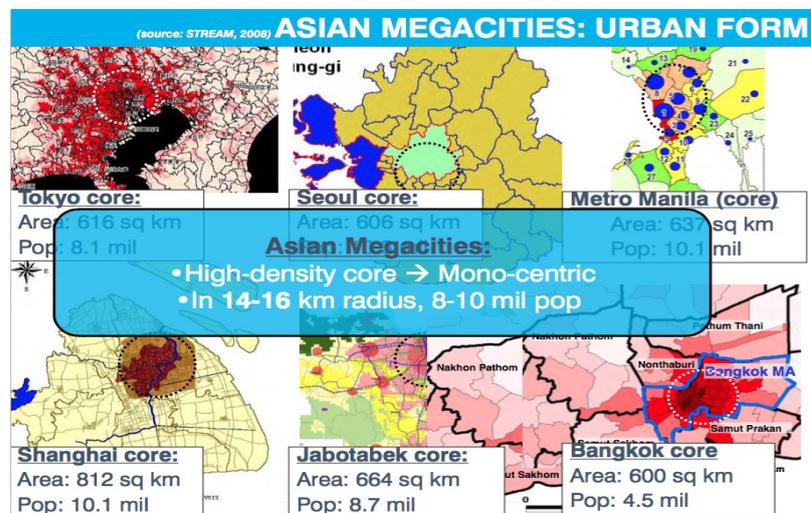
Five Principles in Managing Complex Urban Mobility

1. Reducing the number of trips through land use, spatial planning, and virtual mobility

2. Reducing trip distance through compact land use
3. Mode choice
4. Fuel efficiency
5. Traffic management

Does public transportation have a future in Asia? Systems in Taipei, Hong Kong, and Tokyo are running on operating profits and performing better than US and European counterparts. Revenue is exceeding the cost of operations.

The convergence of information technology and transport offers new possibilities. Personalized public transit, drone delivery services, holograms for virtual mobility, and driverless vehicles are among emerging technologies that may shape the future of transportation in the next 10 to 15 years.



Developers face the challenge of developing efficient infrastructure in mono-centric and densely populated megacities.

Dr. Parikesit is a professor of transportation studies at the Universitas Gadjah Mada (UGM). He also serves as President of the Indonesia Transportation Society (MTI-ITS), Secretary General of the Institution of Engineers Indonesia (PII), and a member of the Board of Directors of the Eastern Asia Society for Transportation Studies (EASTS).

He was also appointed as a policy advisor to the Minister of Public Works and acts as an independent board member of the Indonesia Infrastructure Initiative since 2010.

He holds a degree from UGM for Civil and Environmental Engineering. He took his Master's Degree from the Institute for Transport Studies (ITS) of Leeds University in UK, and his doctoral degree with predicate summa cum laude from the Institute for Transport Planning and Engineering of Vienna University of Technology in Austria.

Session 1 Panel Discussion

ON ASEAN CITIES AND THE MILLENNIUM DEVELOPMENT GOALS

Mr. Cleto Gales, Jr. (moderator): One of the 17 Millennium Development Goals is to build inclusive, safe, and sustainable cities and human settlements. How can ASEAN cities capitalize on this goal?

Prof. Dr. Danang Parikesit: The millennium development goals are missing the harnessing of partnership between the government and private sector, as well as investments in mobility. The challenge is how this can be adopted in developing countries.

Ms. Nana Soetantri: There is no correlation between what is happening at the strategic level and what is happening on ground. It's one thing to develop strategically, but how it is translated into practical implementation is also important.

Mr. Arnel Casanova: A sustainable city means there is a cohesive community where people live not too far from where they work. Affordable housing near the business center is one way to help those living far from the city where they work.

ON THE LIMITATIONS OF SUSTAINABILITY

Sartika Hasirman (student, Indonesia): What is the limitation of sustainability? How safe should it be, how much growth do we need, how is it going to be environment friendly?

Prof. Dr. Parikesit: I don't believe that we should use a target as an ultimate objective of achieving sustainability. To me, sustainability is a process, a journey that everyone in the community should engage in. Engagement, continuous process, and sharing the optimistic views are the most important.

ON CITY POPULATION AND ITS CONTRIBUTION TO GDP

Thilageswaran Vijayan (student, Malaysia): Organization contributes to GDP, but at what cost, meaning, the comfort level of people?

Ms. Soetantri: At some point, the city will no longer be comfortable to live in; but it is human nature to adapt. As long as developers make living in the city attractive, people living in provincial areas will keep coming to the city. Therefore, what we need to address are those who come to the city for temporary reasons (i.e., to work or to study).

Mr. Casanova: We must ask ourselves: what quality of life do we want to live? There should be balance between individual choices and what the community wants.

Prof. Dr. Parikesit: The more agglomerated a city has become, the higher the economic welfare in terms of GDP. The challenge is to reduce the agglomeration while increasing economic wealth.



ON SUSTAINABILITY IN URBAN AND RURAL SETTINGS

Ariel Joseph Nipas (student, Philippines): How should we deal with urban sprawl in relation to sustainability, and how can we help provinces become more sustainable?

Mr. Casanova: There must be a comprehensive land use plan. Government must intervene and be the steward of the land. Land must be developed in such a way that there are still open spaces. In the Philippines, we must have a land-use act that utilizes idle land.

Ms. Soetantri: Any new development must consider the synergy between transport, land use, and urban planning. Strong government leadership will create greater impact on urban development.

Prof. Dr. Parikesit: Japan is the best example in urban sprawl management wherein government incentives are given to private developers who build offices near railway stations.

ON THE DOMINANCE OF PRIVATE TRANSPORTATION IN VIETNAM

Le Thi Cam Linh (student, Vietnam): How do you propose to fix the situation in Vietnam where there are more private transportation?

Prof. Dr. Parikesit: There may not be a need to limit private vehicle ownership. Instead, there should be a limit to the use of private vehicles.

ON INTEGRATING MOBILITY WITH TECHNOLOGY

Ramon Garcia (audience): How serious is the integration between information technology, government sector, and public transportation?

Mr. Casanova: Technology is very much ingrained in today's lifestyle. That is why developers must have the vision to integrate modern technology with infrastructure utilities within a city.

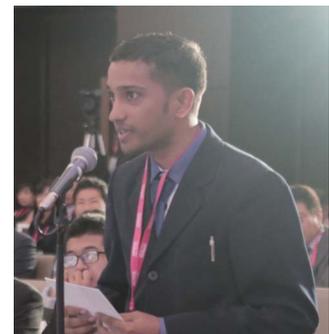
Prof. Dr. Parikesit: Mobility, which requires technology and behavioral change, is very important.

ON GOVERNMENT SUBSIDY OF PUBLIC TRANSPORTATION

The last question from the audience asked whether it is advisable for the government to subsidize public transportation fare prices, or charge the public more in order to help with the maintenance of trains.

Mr. Casanova: I do not believe in subsidy. What is important is to provide the public with more choices to avoid public transportation from carrying passengers beyond capacity. Public-private partnership must allow equitable risk allocation between government and the private sector.

Prof. Dr. Parikesit: Subsidies can create division within the community. Political and social reality dictates that government must subsidize the poor. But the economic reality is that funds must be used to build better infrastructure instead. The right question should be: what level of subsidy is acceptable to both realities?



An Overview of the Infrastructural Options for People-Centric and Environment-friendly Transportation Systems

Session 2

Infrastructure-based public transport solutions are needed to achieve efficient, safe and affordable movement of people. Speakers for this session shared their knowledge and experience in planning and implementing such solutions, specifically lessons and realities in securing investment, reducing negative environmental impacts, engaging multiple stakeholders, maintenance costs, and the like. Speakers also expressed their views on how such solutions can transform ASEAN countries into a competitive, sustainable, and inclusive society for its entire people.





DR. SOMPRASONG SUTTAYAMULLY
 Director of Business Development
 Mass Rapid Transit Authority of
 Thailand

A sustainable transport system is robust and long-lasting. Relieving traffic congestion by building more roads only encourages private car ownership.

In many ASEAN countries, mass transit is not popular because decision makers do not understand passengers' needs. A successful transportation system works together with land planning.

Ridership of mass transit in Bangkok is lower than what was originally forecasted (70% forecast vs. 5% actual usage) because of the first and last mile problem. Mass transit stations are not close enough to where people live and work. Other modes of transport are required to reach the station.

Developers must provide seamless connectivity, comfort, and convenience for the public to use the system.

Here are some guiding principles for sustainable transport:

Access – People are entitled to reasonable access to other people, places, goods, and services.

Equity – The system must strive to ensure the social, inter-regional, and inter-generational equity, meeting the basic transportation-oriented needs of all people.

Health and Safety – The transport system should be designed and operated in a way that protects the health and safety of all people and enhance the quality of life in communities.

Degree of Individual Responsibility – All individuals have a responsibility to act as stewards of the natural environment and to make sustainable choices regarding personal movement and consumption.

Integrated Planning – Successful public transportation systems are designed with seamless infrastructure connections that favor the transit user.

Pollution Prevention – Transportation needs must be met without generating emissions that threaten public health, global climate, biological diversity, or the integrity of essential ecological

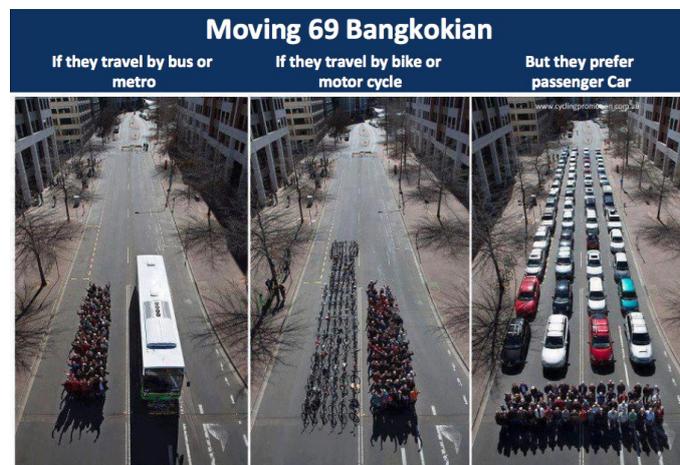
processes.

Land and Resource Use – Make efficient use of land and other natural resources while preserving biodiversity.

Fuller Cost Accounting – Transportation decisions should reflect social, economic, and environmental costs.

In a survey conducted in Bangkok, people cited high fares, inconvenience, and insufficient information as reasons for not using the MRT. Decision makers are taking these earlier planning mistakes into account as they work to improve infrastructure and usage.

The Mass Rapid Transit Authority's mission is not only to build a state-of-the-art transportation system, but to fill the system with as many passengers as possible. By integrating with other services to provide feeder systems and working with private developers to create markets to fill trains and buses, the MRTA is building a public transportation system that will ease road congestion and answer users' needs.



More people in Bangkok would rather drive or ride their cars, which contribute to road congestion.

Dr. Somprasong is a transportation planner of 17 years experience. He specializes in strategic transport planning, model, safety, GIS systems, and state-of-the-art traffic technologies. His experience as Transport Engineer includes conducting feasibility study for all new and extension of existing transit lines including searching new suitable technology for mass rapid transit.

Prior to his position as Director for Business Development Department of Thailand's Mass Rapid Transit Authority, he was the Acting Director of Land Management And Development Department. He has also held various positions such as Lecturer at Suranaree University of Technology, Researcher for Construction Laboratory for Automation and System Simulation, Traffic Engineer for Sindhu Pike Bodell Ltd., and Civil Engineer for the Department of Highway.

Dr. Somprasong earned his bachelor's degree in Civil Engineering from Khon Haen University in Thailand. He finished his Master's Degree for Transportation Engineering at Asian Institute of Technology and completed his doctorate degree at the Ohio State University, Ohio, USA.



MR. NOBUKAZU NAGAI

Director, International Policy and Project Division, Railway Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan

Economic development generally leads to motorization. In the 1960s, as Japan dramatically developed its economy, roads were filled with cars, buses, and trucks. This caused city area pollution that damaged people's health. A shift to public transportation was a solution for easing congestion.

In Japan, railways play an important and central role in people's mobility. Trains are used for 60% of all trips in Tokyo, which relies on railways more than other major cities like New York and London.

People trust railways and realize its value in their lives. Safety, punctuality, and convenience are major factors for railway success. The Japanese railway system is the safest in the world. Its average delay of Shinkansen is just one

minute. In addition, passengers seek convenience and comfort in railways as their quality of life improves. When upgrading their services, Japanese railway operators make every effort to meet passengers' needs for frequency, accessibility, and information.

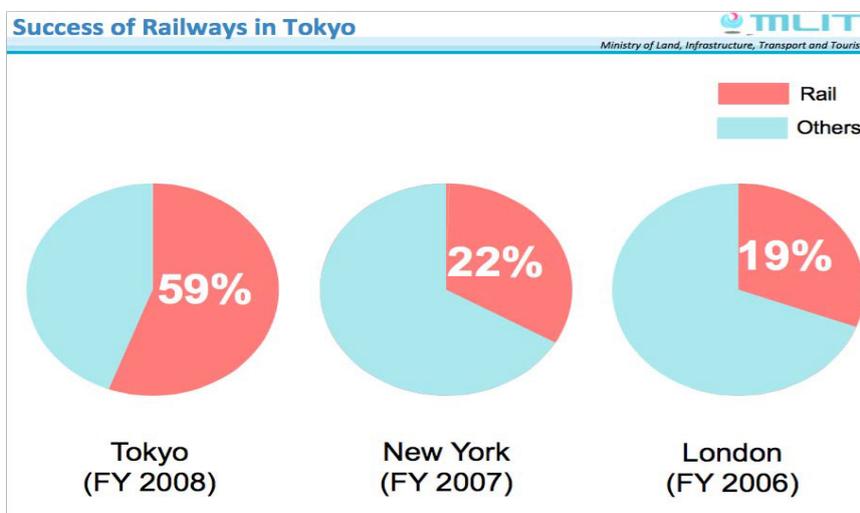
The most recent developments in Tokyo's railway systems are the following:

- 1) Network Development. The railway network in Tokyo is about 2500 km and has been steadily expanding even after flat economic growth in the 1970s.
- 2) Capacity. New lines contribute not only to expanding the network but also increased capacity between existing terminals.
- 3) Convenience. Services that connect lines run by different operators shorten travel time. Fare cards such as the Suica and Pasma are inter-operable and may be used for payments for train fare,

taxis, and at convenience stores. Station development attracts passengers with shops, museums, hotels, and other facilities, while train line development encourages the growth of new towns in the area near the station. When a new line is developed, it attracts more passengers and the new town attracts more residents and commercial facilities.

Enhancing accessibility is a top priority. The Japanese government encourages installing escalators or elevators by the end of March 2021 to all stations with 3,000 or more passengers per day. Concierge service and information in multiple languages are helpful for foreign visitors. Some stations even provide free Wi-Fi services.

With its continuous improvements, Tokyo's reliable and accessible railway system can be a reference point for the future of transit-oriented development around the world.



Japanese people take the trains more often than their counterparts in New York and London.

Mr. Nobukazu Nagai is currently the Director of the International Policy and Project Division in the Railway Bureau, Ministry of Land Infrastructure, Transport, and Tourism. He leads his team to deal with international affairs on the railway, including the promotion of the Japanese railway system to the world. Since entering the Ministry, he has experienced policy planning and coordination in a variety of areas such as road transportation, aviation and ocean policy. When he worked at the regional office of the Ministry in Osaka, Japan, his main responsibility was to help maintain or develop the transportation network in the region, with public transportation services and taxi service.

He also has experience in the Japan Coast Guard for criminal investigation issues, and Cabinet Office for administrative reform. He has a Bachelor's Degree in Law from the University of Tokyo and an MA in International Studies and Diplomacy from the University of London.



MR. JIRO YASUDA

Division Director, International Business Development and Sales Division, Rail Systems Hitachi, Ltd.

Trains are efficient and eco-friendly modes of public transportation. But without car maintenance facility, trains cannot keep operating. Train management systems and signaling systems keep the train operation reliable and safe. Stations require ticketing and platform systems. Above all, power must supply for all these systems.

Hitachi manufactures controlling systems for trains based on clients' needs. The company now aims to integrate not only the train but also the management system and other subsystems into one.

Hitachi's train business operations started in the 1920s with the steam locomotive. It supplied the monorail in 1962 and the Shinkansen bullet train in 1964.

The company won the contract to

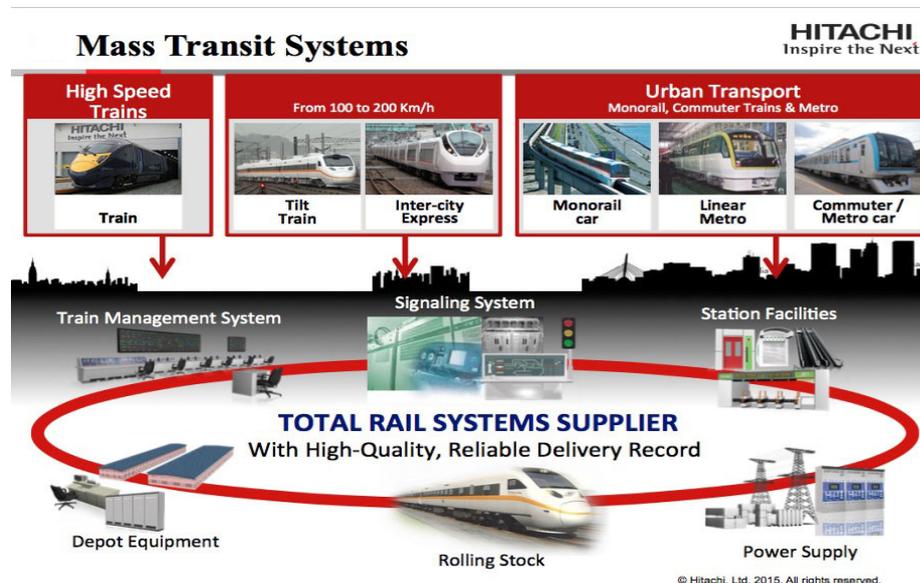
deliver the railway signaling system in Myanmar with the support of Japan International Cooperating Agency (JICA). This turn-key railway solution for Ho Chi Minh City in Vietnam is the first contract to cover the entire railway system. Commercial operations for a monorail in South Korea started successfully in May 2015.

In the UK, the company is manufacturing 866 high-speed trains (225 kph) under the PPP (Public Private Partnership) project scheme with a 27.5-year maintenance and service contract. Expected revenue is more than USD\$8 billion. In addition, Hitachi set up a new factory that created local jobs for more than 700 people, as well as 500 jobs for maintenance service in UK. It is also contributing to the local community through academic industrial cooperation

with Sunderland University and Bishop Auckland College.

The global rail sector is experiencing a clear trend towards consolidation. Hitachi will acquire a rolling stock manufacturer, Ansaldo Breda, and the signaling & turnkey transport system supplier, Ansaldo STS. The acquisitions are the key milestone in our strategy to become a global integrated provider of total rail system solutions.

"Big data" and the "Internet of Things" will drive truly integrated transport solutions for future generations. By combining new knowledge and resources with Hitachi's information technology expertise, the company will truly integrate the systems of components via network connectivity to make future rail systems more efficient, comfortable, and economical.



Dependable suppliers of complete public transportation facilities can help provide efficient mass transit systems.

Mr. Jiro Yasuda is currently the Division Director, International Business Development and Sales Division for Rail Systems of Hitachi, Ltd. Prior to his post, he held various positions in the company such as General Manager for Global Sales and Marketing Department for Rail Systems, General Manager for European Operations Department of Overseas Power Systems Sales Division, and Deputy General Manager for Thermal and Nuclear Power Systems Department 1, Overseas Power Systems Sales Division, Power and Industrial Systems. He holds a Master's degree from the University of Notre Dame.

Session 2 Panel Discussion

ON PROBLEMS ABOUT PUBLIC TRANSPORTATION PLANNING IN ASIA

Mr. Cleto Gales, Jr. (moderator): A study on public transportation in Asia revealed the following problems: (1) many of the transport plans are not fit for purpose; (2) plans were not based on empirical evidence; (3) transport planning were left to experts without the participation of key stakeholders; and (4) politics have won over technocratic advice. What are your reactions to these findings?

Mr. Nobukazu Nagai: There should be accountability to stakeholders: users, providers, policy makers, and residents of the region. The stakeholders should also be involved in discussing how public works should be implemented.

Mr. Jiro Yasuda: There should be transparency for all stakeholders so that concerns are openly understood, discussed and accepted.

ON INTEGRATING TRANSPORTATION SYSTEMS INTO URBAN PLANNING

Mr. Gales: There have been discussions that raise the need to correlate urban planning with transportation. In your respective experiences, how do you ensure that your plans are integrated with the grand plans (of urban planning and transport plans)?

Mr. Yasuda: From a private company's point of view, we are not only capable of supplying railway systems but also other systems like water, healthcare, etc. So we are somewhat contributing to the urban plans.

Mr. Nagai: The important thing is how we manage and plan for the future, and the involvement of the broader stakeholders is the key to success. Coordination between city development with transportation policy is also important.

ON BIG DATA FOR PUBLIC TRANSPORTATION

Kiyofuji Takahiro (student, Japan): In ASEAN, is there any possibility of introducing big data utilizing the internet for transportation?

Mr. Yasuda: It can be realized, depending on the policy makers and planners. If data is sufficient but too big to analyze without internet connectivity, maybe we have the obligation to explain how using the internet for transportation will be efficient and useful.

Mr. Nagai: Big data is one of the best resources for public transportation. But government always sees the situation comprehensively: how difficult is it to optimize between the usage of big data and privacy?

ON ENVIRONMENT-FRIENDLY TRAINS

Pichayut Tananchayakul (student, Thailand): Which type of railway train is the most environment-friendly?

Dr. Somprasong Suttayamully: Trams are okay, but you need to provide space because trams use the same space level with road traffic. It also requires discipline for the road user to ride alongside trams.

Mr. Nagai: Someone should decide which mode of transport is the best. Most trams in Japan were abolished because they have become obstacles for smooth traffic flows. In its place, we built subway systems, elevated mass transit systems and automated guideway transit (AGT) systems.

Mr. Yasuda: Consider this: how many people are using this railway station and how many (or size) of trains are necessary.

ON CONNECTING CARS TO BANGKOK MASS TRANSIT SYSTEMS

Pachara Aungsusuknarumol (student, Thailand): Is there any possibility that the underground train could have a card that can be connected to the BTS sky train or the Alpha link?

Dr. Suttayamully: It is easy to use common tickets for all systems, but the problem is the lease agreement among businesses, and how they can share the money stored in a transport card.

Mr. Nagai: The fair price system could be the solution. The best way might be the integration of railway systems, but this is not realistic at least in Japan.

ON MAKING PUBLIC TRANSPORTATION MORE ACCESSIBLE TO PEOPLE

Poe Nu Htay (student, Myanmar): If people want to use public transportation, they have to travel from their homes to the station either by taking the taxi or by bus. What are other ways that will make sure that the public transportation system is more accessible to people?

Mr. Nagai: We should consider the competition between private cars and public transportation. To tackle the first and last one mile issue, the responsibility of government is becoming more important, for example in the area of traffic management.

Dr. Suttayamully: Bus rerouting that would make public transportation closer to the commuter will help, as well as strong government leadership.

Mr. Yasuda: A software that simulates transport and people's movements can help in developing an optimal combination of public transport modes.



Shaping a Culture of Sharing: Lifestyle Changes for Efficient Transportation

Session 3

Creative and innovative solutions do not rely solely on public transport infrastructure to achieve efficient, safe, and affordable movement of people. Through this session, speakers shared their knowledge and experience on how government, companies or organizations find ways to address the concerns or needs of their stakeholders. Moreover, in the age of handheld devices and social media, speakers shared their views on how new technology and social media can potentially create opportunities or entrepreneurial ventures that enable the efficient movement of people living in urban areas.





MR. MOHINDER SINGH

Advisor
Land Transport Authority Academy,
Singapore

Projections indicate that 70% of the world’s population will live in cities in 2050. Mass urbanization requires the careful planning and designing of cities. The cities of the future should be sustainable and healthy places for people to live in and engines of the global economy.

In Singapore, there are about 5.5 million people. The vehicle population is about 1 million, and the car population is just 600,000, or one car for every eight people. Car ownership level in Singapore is very low considering its rate of economic development. This is a reflection of the transportation management policy put in place early on.

When Singapore gained independence in 1965, most residents were living in slums in and around the city area. There was high unemployment, and much of the infrastructure was not developed. The State and City Planning study undertaken by the government in 1972 mapped out the path for Singapore’s urbanization by

integrating transport and land use to serve the public’s need for mobility.

About 63% of the population in Singapore uses public transportation daily. Buses and the MRT system are the primary modes of transportation. The metro system was completed in 1990 and extended to serve new towns. It covers about 182 km. In 15 years, this will be doubled to about 360 km.

The bus is also a key mode of public transport. It plays three roles: feeder to the MRT stations; long-haul journeys and corridors not served by the MRT; and local transport within high-density housing towns, where 85% of the population resides.

Singapore also adopts measures to manage private vehicles. High taxes and registration fees discourage car ownership. In 1990, the government introduced the vehicle quota system which regulates the growth of vehicles based on road capacity. Singapore was also the first city to introduce

road pricing, or congestion pricing, in 1975. The current electronic road pricing system allows varied rates depending on the vehicle and the time of day.

Current initiatives to improve transportation are as follows:

Active Mobility – Create a safe and harmonious environment that encourages cycling, walking, and personal mobility devices.

Walk to Ride – Walkways in high usage hubs and residential areas make taking public transportation easier.

Travel Smarter – Use incentives such as discounts, prizes, or free early morning MRT rides to ease congestion during peak hours.

By engaging with people to co-create the future transportation system and expanding the rail system so that 80% of households will be walking distance from an MRT station, the city-state is moving towards a “car-lite” situation in which Singaporeans rely predominantly on public transportation for their trips.



Buses prove to be useful for Singaporeans, either as feeder to MRTs or as primary ride to distant destinations and high-density residential areas.

Previously the Dean of LTA Academy, Mr. Singh was the Director of Planning of Singapore’s Land Transport Authority from 1996 to 2007. Prior to this, he was with the Public Works Department and the Ministry of National Development serving various portfolios in urban and transport planning. His work experience in Singapore’s land transport development covered transport policy and planning, planning of road and MRT systems, feasibility studies, transport infrastructure development, traffic management and congestion pricing.

Mr. Singh is also currently the Head of Transport Planning of MSI Global, a wholly-owned subsidiary and commercial arm of the Land Transport Authority (LTA) of Singapore.



MA. PHAM THANH TUNG

General Director, International Cooperation Department
Ministry of Transport, Vietnam

The transportation sector plays a crucial role in the economic development of rapidly urbanizing areas. Without efficient transportation, the economy faces difficulties in trading and services.

In the mid-2000s, Vietnam's economy grew 7-8% annually. The most populated cities, Hanoi and Ho Chi Minh, urbanized rapidly. The number of registered vehicles increased with the expansion of transport infrastructure and economic development. As of 2013,

there were more than 400,000 motor vehicles and 4.1 million motorcycles in Hanoi.

Many people in Hanoi would rather use their own motorcycles and cars than public transportation. Motorcycles account for 81% of all trips taken in Hanoi. Public transportation accounts for only 11% because of unreliable and inconvenient systems. Preference for private transportation increased air pollution and traffic congestion.

After Hanoi experienced its worst traffic congestion in early 2010, the central and local governments introduced policies to mitigate traffic congestion. The city built pre-fabricated steel structure flyovers where traffic jams frequently occur and ring roads and radial roads lead to the inner city.

The government restricted the use of cyclo (rickshaw); changed work and school times to ease traffic flow during rush hour; and banned sidewalk parking in the city. An educational campaign encouraged people to use public transportation instead of private vehicles. This measure was carried out in conjunction with the improvement of bus quality and quantity, and the

building of parking facilities for cars in the city.

In addition to traffic alteration, the city government also started using an IT system for traffic management. The schedules and system of bus operation opened to the public online. Surveillance cameras have been installed at city junctions to monitor obedience to traffic laws. Traffic congestion was relieved significantly through these measures, though there are still arguments about the effectivity and sustainable impact of some policies. The Ministry of Transport of Vietnam promulgated an action plan for sustainable transport development for the period of 2015-2020. The policies include infrastructure investment by the government for urban traffic management, and people-oriented and culture-sharing transportation that promotes environment-friendly transit.

As the General Director of the International Cooperation Department of Vietnam's Ministry of Transport (MOT), Mr. Tung is responsible for developing the global integration roadmap in transportation field, coordinating for foreign investment projects, as well as consulting and supporting the negotiations and signing of international agreements.

Mr. Tung has 12 years of experience at the Vietnam National Railways (1978-1990) and 23 years (1990-present) at the International Cooperation Department. With his profound knowledge in transportation and lush experience in international affairs, he has become the key asset and potential leader for the Ministry of Transport.



LAURENCE CUA
General Manager
Uber Manila

Uber makes cities more accessible by seamlessly connecting riders and drivers through its apps. Riders submit trip requests that are dispatched to Uber drivers operating their own private cars in the area. Fares are paid via credit card so that no cash is exchanged.

Uber is a two-way system in which both drivers and riders are rated for accountability and transparency. It depends on the ratings system for real-time feedback. A 24/7 support team is in place to ensure that if a rider has a complaint, issue or concern, the driver can be penalized and his or her account may be disabled so that the platform is as safe as possible for both riders and drivers.

Companies can use information about trips from the Uber API to

connect the app to products and services, including flight booking and hotel and restaurant reservations. The app also connects to music services like Spotify so that the passenger's preferred music is piped into the car speakers during a ride.

Riders like Uber because it's safe and easy to use. Uber assures users that its drivers are properly licensed, and that they pass a stringent background check that includes civil records, credit records, and criminal records.

Some Uber drivers also say they feel safer using the system. Since Uber is cashless, there is no expectation that there is money in the car. Uber also tracks the location of its vehicles at all times.

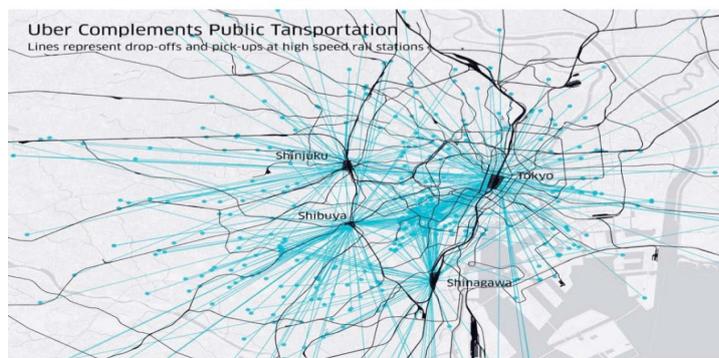
Globally, Uber has created 50,000

jobs every month, including part-time jobs. Because drivers can choose their own schedules, there is no minimum number of hours, and some individuals drive an Uber part-time in addition to working other jobs.

Uber improves community by connecting people to where they live. Even in countries with efficient rail systems such as Japan, Uber acts as a complementary mode of transportation that helps passengers in suburbs reach the last mile. In Washington DC, Uber shares its mapped traffic information with the government to help city planners assess traffic patterns.

In the near future, an innovation called UberPOOL will relieve traffic congestion in Metro Manila through ridesharing that is priced to benefit both riders and drivers.

Complementing existing infrastructure



Ride sharing apps like Uber work with governments where it operates according to the current infrastructure and public transportation systems.

Laurence Cua is the General Manager for Uber Manila, a transportation mobile application for car-hailing service that is available in 57 countries. Previously, he was responsible for the prepaid business for T-Mobile in the United States. Prior to that, he was in charge of trade marketing for the hair, oral care and deodorants categories for Unilever Philippines. He holds a Management Engineering degree from Ateneo de Manila University. He is passionate about anything technology-related and does 3D printing in his spare time.

Session 3 Panel Discussion

ON COMBINING INNOVATION AND INCLUSIVENESS

Dr. Jose Regin Regidor (moderator): How do you come up with a good mix of innovation and inclusiveness?

Mr. Mohinder Singh: Infrastructure development and improvement are required, particularly in developing communities. Systems and policies must be integrated and optimized to cover all aspects of transportation.

MA. Pham Thanh Tung: User behavior is important – from using private transportation to using public transportation. They must be educated on the benefits of using public transportation in terms of energy conservation and the culture of sharing.

Mr. Laurence Cua: Public transportation is everybody's problem. Ultimately, innovation is something that we should all be embracing. Policy makers have the power to make these changes. There should be partnership between government and private sector in using technology to deliver what the public needs as a means of transportation.

ON ADAPTATION OF TECHNOLOGY AND CHANGING MINDSETS

Erina Nishi (student, Japan): Can you provide an example of a design that can help change mindset? How can technology be adapted to certain ASEAN countries that do not have much transportation infrastructure?

Mr. Singh: Mindset change is driven by the people, not the government although it can influence the change. The role of social media is also critical in showing people what they might want.

Mr. Tung: It takes time to change people's mindset, although some also require enforcement. Government can use mass media in educating the public about the benefits of mass transportation.

Mr. Cua: Innovation exists because there is a demand. Understand that innovation is not something being forced upon people. It is something that is introduced and if people use it, then it is making things better. Policy makers should be engaged and made to understand how technology is making an impact into people's lives.

ON LOW COST CARS

Andhanu Surya Ismail (student, Indonesia): If we want people to take public transportation, why does government agree to low cost cars?

Mr. Singh: We should not encourage low cost cars as too many cars, especially in cities, will lead to congestion. On the other hand, the government should be ready to provide its people with efficient transportation.

Mr. Tung: In Vietnam, government does not encourage private vehicle purchase (thus cars are expensive) since infrastructure is poor. Low cost cars should still comply with emission standards.

ON "SELF-CENTERED" DRIVING

Sandy Phone Naing (student, Myanmar): How do we change the behavior of "self-centered" (selfish) driving?

Mr. Cua: Training is important. Only drivers who are well trained and familiar with road traffic rules should be given the license to drive. That's why customer feedback in mobile apps is important. It keeps drivers' attitude in check.

Mr. Singh: Intervention from policy makers, law enforcers and even social media should be made.

ON DEALING WITH INEFFICIENT TRANSPORT SYSTEMS

Dzafran Adris Bin Azmir (student, Malaysia): How do we reconcile with inefficient transport systems? Is it better to reconstruct current infrastructure, or build something better on top of what we currently have?

Mr. Singh: The solutions must adapt to each country's situation. Look at fundamental principles and see which ones apply and how they can be adopted to the situation. In Singapore, for example, the first thing we did was to reorganize the bus system instead of building an MRT system since we could not afford to do so at that time.

ON REGULATING TRANSPORTATION APPS SERVICE LIKE UBER

Tan Si Min (student, Singapore): How should government regulate companies like Uber? How does Uber affect taxi services?

Mr. Cua: Government should see that what Uber does is it meets demands. Government should understand how technology like Uber will benefit the passengers, and eventually traffic flow. There is a difference in price between Uber and taxis. What Uber offers is an option and additional supply of transportation.



Mentoring the Student Delegates

Guiding the students during their presentation of proposals were distinguished mentors whose respective backgrounds make them proper authorities on the subject matter. Mentors Elaine Tan of ASEAN Foundation, Maida Marie Salcedo of UNICEF Philippines, and Mitsuhiro Shimizu of Hitachi Asia Ltd. – Philippines branch all listened to each student group's presentations with keen interest, after which they each gave their informed and expert feedback, perspectives and advice according to each student group presentation.

Ms. Tan's experience working with international governments and civic groups gave the students an idea about the feasibility of their proposals. Ms. Salcedo, being a 6th HYLI alumna, reminded the students about the importance of thinking out-of-the-box. Mr. Shimizu's pointers shed light on how to approach the issues from a business standpoint. All three mentors helped the students realize the strong points of their ideas and where they can improve, which they can use in practical settings beyond HYLI.

Mentors' Profiles



Ms. Elaine Tan
Executive Director
ASEAN Foundation

Elaine Tan is the 6th Executive Director of the ASEAN Foundation. A development professional with more than two decades of international experience, Ms. Tan has designed, managed and evaluated development programmes in seven countries across Asia.

Over the past decade, Ms. Tan has advised government agencies, legislatures, corporate and nonprofit clients in both emerging economies and post conflict countries. She has expertise in advocacy, legislative processes and governance, having held senior level positions within the United Nations, ASEAN, as well as civil and community organisations.

Prior to ASEAN Foundation, Ms. Tan was responsible for the direction, leadership and management of Yayasan Sejahtera, Malaysia. She also headed UNIFEM, now UN WOMEN, for the United Nations.

Earlier in her career, Ms. Tan served as Head of the Human Development Unit for ASEAN Secretariat where she effectively led the discussions and formulation of joint work plans for the betterment of socio-education in Southeast Asia.

Ms. Tan received a Chevening scholarship to obtain her Masters in Development Studies from the University of Leeds, United Kingdom. She is an alumnae of Smith College, USA.



Ms. Maida Marie Salcedo
Major Donor Fundraising Officer
UNICEF Philippines

Maida Salcedo is currently the Major Donor Fundraising Officer of UNICEF Philippines. In this role she balances business research, marketing and communications for the development sector. She was formerly a Business Development & Marketing Professional for the world's biggest law firm, Baker & McKenzie, and has been an Accounts Manager for global nonprofits in a fundraising consulting firm.

In a volunteer capacity, she is vice chair of a national alliance of young leaders who are recipients of the Ten Outstanding Students of the Philippines award. They have been working nationwide with groups such as Transparency International, PLDT-Smart Foundation, and Philippine Center for Entrepreneurship to instill nation-building in the youth.

Maida received her MBA (Regis Program) from the Ateneo Graduate School of Business and earned her Bachelor degree in Business Economics in the University of the Philippines where she graduated magna cum laude. She is also an ASEAN Fellow of Singapore International Foundation at Singapore Management University.



Mr. Mitsuhiro Shimizu
General Manager
Hitachi Asia Ltd. – Philippines Branch

Mitsuhiro Shimizu is General Manager of Hitachi Asia Ltd. – Philippines Branch with responsibility to grow the operations and to expand Hitachi's Social Innovation Business in the Philippines. Concurrently, he is Head of Power Business Strategy, Power & Infrastructure Systems Group, Hitachi Asia Ltd.

Prior to his current position, Mr. Shimizu was General Manager for Hitachi, Ltd., Power Systems Company and was based in Tokyo, Japan.

He began his career with Hitachi in 1987 as part of the International Sales & Marketing Division – Power & Substation Equipment, Hitachi, Ltd. In 2002, Mr. Shimizu was promoted to the position of Deputy General Manager – Group 1, Hitachi Asia, Ltd. and was based in Singapore. In 2005, Mr. Shimizu was appointed Chief Representative for Indonesia Operation of Hitachi Asia Ltd. and was based in Jakarta.

Message from ASEAN Foundation

Firstly, I would like to commend the students who participated in the 13th HYLII for coming up with thoughtful recommendations on how to address transportation woes of the general public in Metro Manila. It was certainly interesting to listen to the proposed solutions. The students certainly reflected on the problem by listening to the affected commuters, making observations from their personal experiences as well as researching about the problem.

I like the process that the students took which focused on inclusivity, people-centric and environment-friendly. In keeping with the current generation's affinity to IT, it was interesting to note that their solutions also required the incorporation of IT.

Inclusivity, people-centric and environment-friendly would frame how policy makers address the transportation challenges in ASEAN in the coming years. In the not distant future, sustainable transportation that are environmentally friendly, accessible and affordable will be key to reducing global greenhouse gas emissions and decreasing poverty by providing greater access to markets and basic services at an affordable cost.

The students certainly demonstrated that they are able to reflect on a critical problem and coming up with doable solutions from a participatory perspective. For that, I congratulate them for their efforts.

Ms. Elaine Tan
Executive Director
ASEAN Foundation

Students' Perspectives

Creating safe, efficient and affordable public transportation systems through infrastructural options



Students' Perspectives

“An Overview of the Infrastructural Options for People-centric and Environment-friendly Transportation Systems”

To establish their respective propositions, the first two groups of student presentors referred to scenarios culled from the current commuter situation in Asia: the first took the point of view of a regular citizen in Metro Manila, while the other integrated all the common problems of transportation in Southeast Asia.

Both groups pointed out that the issue of traffic congestion, especially in finance capitals and business districts of highly-urbanized cities, is an effect of unregulated systems, disorganized public transportation, and lack of information on public transport routes and schedules.

ISSUES

- Inconducive Walkway




- Lack of Facilities




- Lack of Information




- Overcrowding




- Inconsistent Service




- Health Issues





These concerns are forcing people to prefer private transportation over public facilities.



Group 1

On the other hand, ineffective pedestrian walkways, lack of facilities for people with special needs, and harmful emissions from vehicles are also issues that need to be addressed. Because of these conditions, commuters prefer to use private transportation rather than take the bus, train or other means of public utility transportation. For them, commuting has become inconvenient and unsafe.

Both groups presented multi-pronged solutions that would improve transportation systems and benefit commuters. The first group's 3 Is approach stands for intermodal, integrate, and inclusive. This involves integrating all transport systems seamlessly via a transport hub, where commuters can choose their preferred mode of transportation housed in a safe environment. Inclusiveness is about making sure that everybody – persons with disabilities, senior citizens, and pregnant women – have access to all facilities.

Group 2 took a four-point approach: inclusiveness, efficiency, safety for people, and safety for the environment. This involves incorporating the need to have a firm concern for the environment not only for preservation sake, but also for the overall well-being of commuters. Highlighting their people-centric approach in their presentation, their plan is to utilize and improve existing infrastructure to make way for changes for an overall better system of public transportation.

Both groups proposed the installation of covered and protected walkways for pedestrians for safer transfers from one transport terminal to the next. This proposal, according to the students, would encourage more people to use public transportation since the flow of travel from one terminal to another would become more convenient and seamless.

A feeder system would be a good way to lessen congestion in areas of high commuter concentration, as Group 1 proposed. Different mediums of feeders with scheduled routes and intervals would be provided at high-traffic points in the city. These mediums would

SIGNIFICANCE OF SOLVING THESE PROBLEMS

WHY THE SOLUTIONS SUGGESTED WILL MAKE A DIFFERENCE?



NOBODY GETS LEFT BEHIND! (WALANG IWANAN)



Group 2

The idea is to give everyone a choice as to which mode of transportation to take in order to solve persistent transportation and infrastructure problems.

be what Southeast Asian countries have now, such as buses, and specialty rides like the jeepney in the Philippines and the tuk-tuk in Thailand. These feeder vehicles will have assigned routes, and strict enforcement of routes and schedules must be enforced. On the other hand, Group 2 proposed an incentive-based solution in transit, putting price brackets on different time slots to encourage alternative schedule of travel away from peak hours.

Integrated information technology solutions such as digital apps and information trackers will help make commuters aware of transport routes and schedules, nearby amenities, and related travel information. Installing Wi-Fi connection in all transport hubs will make access to all this information easy for commuters.

Both groups proposed one medium of ticketing and payment for all public transportation in the form of a smart card, which is common today in bustling cities such as Hong Kong, Tokyo and Seoul. The smart cards can also be used in convenience stores and select shops located at transport hubs, making transactions seamless and convenient for all commuters.

To implement their proposed solutions for a more people-centric and environment-friendly transportation system, Group 2 suggested gradual rollouts of old vehicles and equipment in favor of newer and more environment-friendly alternatives. They also envisioned a centralized public transport system, with the government perusing a fixed amount to transportation suppliers from the collected revenue that transit earns in a certain time period. This ensures that the revenue gained from using public transport goes into more infrastructure development. They proposed to use an open tender system, with the Land Transit Authority being the highest regulatory body.

Group 1 proposed a Plan-Do-Check-Standardize model, wherein there is a checklist per category to ensure that the solutions meet the needs of the commuters, with the help of flexible regulations and management.

There was also a proposal to implement active mobility through the use of bicycles as a means of environment-friendly transport systems. Bicycles and bike lanes would help reduce harmful emissions and traffic congestion, as well as integrate exercise into a commuter's habits.

Overall, both groups agreed that public transportation systems must ensure that the commuters are safe, secure, and convenient. This will discourage them from using private cars, therefore lessening traffic congestion, harmful emissions, and other negative effects.

Group 1: Mah Vin Cho (Malaysia), Nan Kham Mo Win (Myanmar), Marc Wendolf Duque (Philippines), Anjali James (Singapore), Nuzzree Watcharasakonpong (Thailand), Thao Chi Pham (Vietnam), Sartika Hasirman (Indonesia), Takahiro Kiyofuji (Japan)

Group 2: Thilageswaran Vijayan (Malaysia), Poe Nu Htay (Myanmar), Danielle Marie Cang (Philippines), Si Min Tan (Singapore), Kunnapat Rungruangsatien (Thailand), Dang Khoa Nguyen Dinh (Vietnam), Andhanu Surya Ismail (Indonesia)

Mentors' Feedback

- Creating intermodal transportation systems among ASEAN countries is a good concept. On the other hand, pushing for public transportation systems in each country is very challenging. The important thing is to convince stakeholders to set aside their biases and buy into the idea to be able to implement it.
- While it is good to take the perspective of the commuter, it is also important to look at the point of view of suppliers (e.g. bus operators and drivers) when formulating solutions to public transportation problems.
- Promoting ride sharing rather than driving one's own car is a good way to go, as shown by Japanese youth.
- Budget consideration should be part of proposed solutions. While government subsidy is ideal, the overall plan should be financially viable.
- HYLI is not a venue for students to come up with solutions, but more of a challenge to students to ask the right questions and look at the problem with the right frame of mind. Do not fall into the trap of looking at glossy solutions.
- Generally, the presentations contain good ideas and presented in entertaining manner.

Questions and Clarifications

ON THE TIPPING POINT OF THE PROPOSED SOLUTIONS

What for you would be a tipping point in the whole menu of solutions that you have just provided?

Anjali James (Singapore): We took our cue from the everyday life of a Manila commuter. In the case of the Philippines, a well-implemented feeder system can really change the face of public transportation. A feeder system that is connected to all MRT stations from residential housing is ideal, so that people feel that the commute is seamless and they don't have to feel that they have to go out of their way to use public transport. This would encourage them to use it more often. In Manila, there are already feeder vehicles that only have access to certain areas, so the idea is already easy to implement. It is just a matter of fixing the schedules and the routes, so if the idea was regulated and thought out seamlessly, then it could really help ease traffic congestion.

ON GOVERNMENT SUBSIDY

Can you expound on your proposed government subsidy system, and what is your framework for its implementation? Which ASEAN country do you think has the best transportation system?

Thilageswaran Vijayan (Malaysia): We want to consolidate private companies, so we can find a way to regulate the public transportation system. If we could find a way to centralize and bring private companies into the public transportation sector, then this transition would make it easier to regulate these companies. For example, legislation would enable one to control the rules that surround public transport.

Tan Si Min (Singapore): For the second question, I would have to say that it is Singapore, but the context is different in every country. Fortunately for us, Singapore is very small so it is very easy for its citizens to integrate. What makes Singapore's transport successful is that it is integrated seamlessly into our lives, and the availability of information is so sufficient that we do not need to exert extra effort to look at where we want to go to get around. The vast availability of transportation options and information makes Singapore's public transportation system very convenient.

ON INCENTIVIZING PRIVATE SECTOR OPERATORS

What would be a good incentive for the private sector operators for them to cooperate in the shift to gain profit from quality instead of quantity? In Asia, creating new regulations invite an

opportunity for corruption. Is regulation the best solution for this situation?

Danielle Cang (Philippines): To address your first question on the specific incentives, I would like to focus on the service contracts. The shift on profit from quantity of passengers to quality of service provided would be explicitly stated. These contracts would be a key to binding the public and private sectors in working cohesively. So what would happen is that the government would pay a fixed amount to those who comply with the regulation that they would have for these service contracts. Now when it comes to incentives, you can modify the contract terms of how much the government will shell out, depending on the quality of service they have provided or the regulations that they would be following.

Thilageswaran: When we talk about corruption, it is a sensitive issue. But the fact is that it is quite inevitable in developing countries. Good governance is the key to good public transportation. But where does good governance come from? It comes from the people. The government is a good representation of the people. If they choose somebody to become their leader, then they have to vote wisely through election and democratic means.

ON HARD INFRASTRUCTURE SOLUTIONS FOR JAKARTA

Jakarta was declared one of, if not the most, traffic congested cities in the world to date. What do you recommend as framework solutions, and how can you solve this problem from a hard infrastructure point of view?

Andhanu Surya Ismail (Indonesia): The problem in Jakarta is that people prefer to use private rather than public transport, basically. Our public transport is not safe and convenient to use, especially for persons with disabilities (PWDs). Public transportation must be open to all kinds of people, no matter what age, status or physical condition; there has to be one big system to cover it all. PWDs also find the need to work and travel, and we need public transportation avenues to support them so that they can go about freely and do their activities without these limits.

Thilageswaran: The issue is utilizing the present infrastructure before implementing the growth of new ones. There are many types of hard infrastructure that we can source from other countries, so is it more cost-effective to implement new types of infrastructure without addressing the central regulation of all public transportation systems in the country?

Students' Perspectives

Creating safe, efficient, and affordable public transportation systems through lifestyle changes



Students' Perspectives

Shaping a Culture of Sharing: Lifestyle Changes for Efficient Transportation

Groups 3 and 4 opened their respective presentations by enumerating the various challenges in transportation that ASEAN countries and neighboring countries like Japan are currently facing. Among the challenges that Group 3 enumerated are congestion, lack of infrastructure, lack of coordination between the government and the private sectors, and the lack of available public information. Group 4 notably highlighted high motorization, which is a result of accessible financing for vehicles, economic policies, inadequate alternatives, and vehicles seen as a cultural and social indicator of status especially among the growing middle class.



Group 3



Group 4

Overall, Group 3 emphasized how Information Technology plays an important role in creating synergy and a culture of sharing. The government, the private sector and society can lead a culture of sharing through the exchange of knowledge and mindset, information management, as well as sharing of transportation and space.

The exchange of knowledge and mindset can be achieved through a proposed simple mode of communication: SENDER->MESSAGE->CHANNELS->RECEIVERS.

The SENDER consists of everyone in society. In terms of promoting the culture of sharing, the MESSAGE focuses on the efficiency and safety of transportation. The efficiency benefits society in aspects of finance ("The more we share, the cheaper it becomes."), environment ("The more we share, the less pollution there is."), and energy ("The more we share, the less we consume and the more sustainable energy is."). Safety, in turn, is about keeping life and property protected. CHANNELS involve interpersonal communication with friends and family, mass communication and organizational communication, and social media and online platforms. RECEIVER, just like the SENDER, involves everyone.

The sharing of transportation can be accomplished by encouraging the use of mass transit (public transportation), sharing of private vehicles, decreasing usage and ownership of private vehicles through real-time ride sharing, demand responsive transport, implementing HOV* (High Occupancy Vehicle) lanes, and integrating ERP* (Electronic Road Pricing) and HOV mandates.

The sharing of space entails encouraging motorists to park outside of the Central Business Districts (CBD) and instead use public transportation going in through a "Park and Ride" scheme. Assigning more parking spaces in residences and offices right outside the CBD area where private vehicles can be allowed to park can also help unclog traffic.

These behavior changes can be instituted through incentives, which could be implemented by engaging companies to promote the Park and Ride scheme among its employees. Corporations will be offered lower taxes, while their motoring employees will get discounted parking fees and lower commuting fare. For this to be effective, the government must serve this with strict enforcement.

Lastly, the sharing of information management is also crucial in addressing transportation issues. There is a missing link between different data sources and also between the information at hand and the users. For instance, CCTV, GPS and railway information are isolated and not properly synergized with the public.

Coming from this issue, mobile app development and big data analytics can be utilized to address this. This way, information will become easily accessible for the commuting and driving public, enabling and empowering them to have better alternatives and make better decisions as to what mode of transportation to take or which route to take.

For instance, Group 3 proposed a Smart City Transport Planner, which integrates all real-time information in most ASEAN cities into one system. The system shows all information to the user including cost and time taken when using different modes of transport.

Group 4, on the other hand, proposed “telecommuting” as one of the ways to address challenges in efficiency of transportation. Telecommuting is a work arrangement where employees fulfill job roles by utilizing modern communication tools and task-based technologies to simulate the traditional work/office environment, eliminating the need to commute to a centralized area of work. Telecommuting can be implemented either by working at home or working in a satellite or decentralized office.

According to the group, it may not be the newest concept but it has limited adoption in ASEAN countries even when a survey in Malaysia alone shows that 60.5% of females are willing to telecommute.

Telecommuting is seen as a way to alleviate the growth of motorization and congestion of both private and public systems. It also negates the need for infrastructural changes. It is beneficial for the employees since it would lessen expenses on daily mobility.

In addition, integration by engaging in non-motorized alternatives like a “Bike and Ride” culture was also proposed since it’s environmentally friendly and cost-effective.

According to Group 4, implementing government policy by bolstering legislation, enforcement and integration of technologies on public transportation would also enable more time-efficient and convenient solutions.

Group 3: Wan Mohammad Aflah Muhammad Zubir (Malaysia), Sandy Phone Naing (Myanmar), Raphael Justin Jambalos (Philippines), Jing Yi Goh (Singapore), Pachara Aungsusuknarumol (Thailand), Cam Linh Le Thi (Vietnam), Erina Nishi (Japan)

Group 4: Dzafran Adris Azmir (Malaysia), Wint Htet thet Han (Myanmar), Ariel Joseph Nipas (Philippines), Kang Ruan (Singapore), Pichayut Tananchayakul (Thailand), Quang Noc Dinh (Vietnam), Adeline Tiffanie Suwana (Indonesia), Kanoko Tada (Japan)

Mentors' Feedback

- Push the information management idea further. What if there is an app that could give the motorist or commuter an option not to jump into traffic, and instead go to a nearby leisure place or event while waiting for congested traffic to subside? This is one way of pushing behavioral change. If we cannot kill traffic problems, go around it through creative solutions.
- The concept of sharing is excellent, and it may be high time to promote it to help change public behavior.
- Telecommuting is a good practical solution.
- Consider urban density. Rural areas have vast expanses of land available. It may be a good idea to tap them to decongest the cities. It may be a long-term solution, but it is one way of challenging ourselves.
- HYLI pushes a type of thinking that is inclusive: everybody gets to be part of the solution.
- This topic may look easy at the onset, but after the presentations, it has proven that this is by far HYLI's most difficult.
- Overall, the proposals are doable and inspiring especially since the students are the future of ASEAN.

Questions and Clarifications

ON PARKING SPACES

Every year, the number of existing buildings increase and the parking spaces are dealing with over-capacity. How can you ensure that people will stop using the streets as their parking lots?

Le Thi Cam Linh (Vietnam): We're not approaching this as an infrastructure problem since we can no longer build new parking spaces. What we're suggesting is that we look into current infrastructures in the cities. There are buildings but these are not fully utilized. Many buildings, even during the day, are not full. We should take a look at them and measure the amount of spaces. We must encourage people to park over the areas outside of the business district instead of leaving their cars on the streets.

Raphael Jambalos (Philippines): We have to increase the dispersion of the cars' parking spaces. The problem is there's little parking in the business districts. There's a lot of underutilized parking spaces outside the area. It's only a matter of dispersing the parking for cars so we can free up the business districts. It's just putting them farther away from Central Business Districts (CBD) and allowing them to ride back in using the Park and Ride system.

ON RIDE SHARING

Do you think it's safe to share vehicles with others and pay instantly after riding? What if problems arise?

Linh: There should be a mindset of sharing. It's hard to be a social norm but it doesn't mean that it hasn't been done before. It just needs involvement in every part of the society. The government is responsible for the problem and originality of regulations but it should be a "mindset and awareness" approach more than regulation terms.

Raphael: Another solution is by allowing the cars to pass through the Park and Ride system. They could go with carpooling system—people who go to the business districts should pass by Park and Ride and pick up legitimate passengers with legitimate business inside the central business district.

ON MORE PERSONAL SOLUTIONS OTHER THAN TECHNOLOGY

The proposals involved are mobile app and data analysis but we are not robots. Is there a solution that can approach the citizens emotionally and understand their needs, wants and consider what they think and feel?

Linh: First, customers always express their opinion. When they pay for a service, they expect something. If they are not satisfied, they always tell you about it. Even if you don't go looking for feedback, customers will give one. People can give you feedback in so many different ways: formal message through surveys, social media, applications and other channels. When you implement a new policy, there will be conversation going on the internet. Organizations and government look for these information to know their feelings and feedback but the more important thing is: are you going to act on that feedback? Do you have enough capacity to act on that feedback and improve the system?

Raphael: Institutions should start caring about what the public impression is. For example, the Metropolitan Manila Development Authority (MMDA) of the Philippines has a PR team that handles Facebook, Twitter and they respond to the stakeholders within 5 to 10 minutes.

The 13th HYLI Student Delegates

The 31 student representatives from
eight countries in ASEAN and Japan





INDONESIA

From Left to Right: Adeline Tiffanie Suwana, Reza Rizky Darmawan, Andhanu Surya Ismail, Sartika Hasirman



JAPAN

From Left to Right: Kanoko Tada, Kiyofuji Takahiro, Erina Nishi



MALAYSIA

From Left to Right: Wan Mohammad Aflah Bin Mohammad Zubir, Cho Mah Vin, Thilageswaran Vijayan, Dzafran Adris Bin Azmir



MYANMAR

From Left to Right: Poe Nu Htay, Wint Htet Htet Han, Sandy Phone Naing, Nan Kham Mo Win



PHILIPPINES

From Left to Right: Ariel Joseph Nipas, Raphael Justin Jambalos, Marc Wendolf Duque, Danielle Marie Cang



SINGAPORE

From Left to Right: Ruan Kang, Tan Si Min, Anjali James, Goh Jing Yi



THAILAND

From Left to Right: Nuzzree W. Charasakonpong, Pachara Aungsusuknarumol, Pichayut Tananchayakul, Kunnapat Rungruangsatiem



VIETNAM

From Left to Right: Nguyen Dinh Dang Khoa, Dang Pham Thao Chi, Le Thi Cam Linh, Dinh Quang Noc



Mr. Hirohiko Morisaki handed out the certificates to all the student delegates.



Each student signed on the HYLII commitment wall as an affirmation of their pledges, with Mr. Hirohiko Morisaki, Hitachi Asia Ltd. Managing Director, signing on behalf of Hitachi.



The field activities were both fun and enriching for the student delegates.



After all the hard work and enlightening experience, all the students found a true reason to bond, celebrate, and gain new friends.

HITACHI

Inspire the Next

Inquiries:

Corporate Communications Group
Hitachi Asia Ltd.
7 Tampines Grande, #08-01 Hitachi Square, Singapore 528736
Company No.: 198900416G
<http://www.hitachi.com.sg>