
This is a raw transcript of the Flagship Urban Solutions session on Mobile Cities of the World Cities Summit, held at Marina Bay Sands, Singapore, on 3 July 2012. The panel comprised:

- **CHEW Hock Yong**– MODERATOR
Chief Executive, Land Transport Authority, Singapore
 - **Alain FLAUSCH**
Secretary-General, International Association of Public Transport
 - **Bert HOFMAN**
Chief Economist and Director, The World Bank
 - **MOHD NUR ISMAL Bin Mohamed Kamal**
CEO, Land Public Transport Commission, Malaysia
 - **PAN Haixiao**
Professor, Urban Planning, Tongji University
 - **Alfonso VEGARA**
President, Fundación Metr poli
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Mr Flausch: “Thank you, Madam. Good afternoon to you all, good afternoon Mr Chew, Chief Executive of LTA, distinguished guests, ladies and gentlemen. I’m delighted to be here no doubt as you may imagine for this special occasion in this dynamic city. You all know that governments everywhere in the world are developing key strategies aiming to realise their vision for the economic and social development of their cities and countries. UITP as the international association of public transport has also developed vision to create a conducive climate, the political will, the vision and commitment to sustainable mobility policy for smart cities involving all actors. In our global presence in the world, UITP has start to work with landmark cities to start Centre of Transport Excellence and obviously Singapore was the one we selected as the first to try to build an association. You know that Singapore has implemented major strategic that’s generating tremendous growth, a distinct regional and global identity as a modern and dynamic Asia.

For the last two years, Singapore was world’s best practise of public transport. LTA demonstrates convincingly to the commerce international community of PT expert and decision maker that the application of the UITP strategic plan, PTx2, was feasible and viable. I don’t want to be too flattering but I guess Singapore is a model for innovative urban governance where public transport is one of the major strategic thrusts. Based on this strategic reason, we worked out with LTA a partnership to build a transport, a centre for transport excellence, CTE the acronym would be, which is a one-stop (4:00) for public transport professional and key decision makers. Now this centre is set up to make some special mission. The first is consolidate transfer and disseminate transport knowledge and

best practise within the Asia Pacific region. The second mission is to develop and promote transport policies and sustainable solutions to meet the specific needs and aspiration of agents. The third mission is to support the promotion of public transport in the Asia Pacific region to achieve the UITP PTx2 strategy that is doubling market share of public transport by 2025. The fourth mission, conduct and facilitate transport related research and training activities and final mission, stimulate and enhance experience exchange between Asia Pacific and between Asia Pacific and the rest of the world. This is the theoretical mission.

Now practically, because I know how Singaporeans are pragmatic and that's what we like doing this project, the first thing of course that we will do in our plan of action is to establish this UITP CTE office to be hosted by the Land Transport Authority. I saw yesterday the first office of my people and I'm very pleased how this is being organised by LTA. But besides those logistic issue, the second of course will be to work with LTA and transport authorities within the Asia Pacific region to set up what we have been calling the UITP Asia Pacific organising committee working group. What does that mean? Cities in Asia Pacific as you know are characterised by significant demographic and economic growth. Reflecting this situation, urban developments are higher on the policy and investment agenda. Many cities in the Asia Pacific regions are facing crucial sides, in terms of mobility policy and transport infrastructure development, which will influence their shape, their mobility patterns and their economic performance for the coming decades. In this context, it's quite normal that PT authorities and regulators are seeking to assess organisational framework and to identify adequate incentives for optimising the performance of our public transport. The time is just for public transport authorities and regulators in the Asia Pacific region to share, compare and discuss their respective approaches and practise and to learn from leading cities in the region and worldwide within this working group.

The first focus on assessing the various models and making sure they're trying to make, to choose the best way. Another strategically important initiative that we would to take under the new Centre for Transport Excellence is the establishment of the UITP Asia Pacific metro platform and the UITP Asia Pacific bus platform to promote more active knowledge exchange for the metro and the bus sector. The mission of these two working platforms will be one, help voice out interest of Asia Pacific metro and bus operators and to launch relevant projects that will benefit the sector in this region, link the Asia Pacific region with the world where UITP is playing an active role in promoting best practise in the metro and bus sector and finally, organise relevant thematic events that will benefit the sector and growth. Last but not least, and eventually in my mind one of the most important part of our city initiative, is the organisation of the Singapore International Transport Congress Exhibition (SITCE) starting from October 2013 next year. My organisation is extremely happy to be able to work with the LTA on this project. In our sector, it's very important to provide a platform where new technologies are showcased, new ideas are discussed and innovative thinking is being generated.

The SITCE is a brand new exercise where UITP brings in the current UITP Asia Pacific Congress to amalgamate with three other ongoing event organised by LTA, namely the World Urban Transport Leaders Summit, the World Urban Transit Conference and the World Roads Conference and I insist on the word 'roads' because it goes beyond just public transport, it's mobility in the city as a whole. UITP shall be working with LTA to build this event here in Singapore to be conducive and sustainable. It is our common wish to promote a larger interest of our sector as public transport offer in my opinion, the best mobility option to people and the planet we are living in. I hope this initiative will help in promoting

sustainable mobility in all area and I wish all success to the new centre created with my friends at LTA. Thank you for your attention.”

MC: “Thank you, Mr Flausch. May we now invite Mr Chew Hock Yong, Chief Executive to Singapore Land Transport Authority to deliver his address. Mr Chew, please.”

Mr Chew: “Good afternoon, ladies and gentlemen. Good afternoon, Alan. We are very happy to be here to launch the various UITP and Land Transport Authority initiatives. The UITP, the Association of International Public Transport and the Land Transport Authority in Singapore have many things in common. I can think of two key similarities. One is the emphasis on public transport. In Singapore, we are small island, we have limited land space but we need to move a lot of people around from point A to point B. So we have no choice but to put a lot of emphasis on public transport and that is precisely what the UITP is trying to advocate for around the world. The second similarity really has got to do with the spirit of learning, of thinking, there are always things we can learn from other parties and also this is spirit of willing to share with other parties the lessons what we have learnt over time. So the communalities I suppose is quite natural for us in LTA to collaborate with UITP on this centre for Transport Excellence in Singapore as well for the Congress that Mr Flausch has mentioned.

And being a practical Singaporean, I will not repeat what Alan has quite adequately described but maybe I’ll just make a few points about both the Centre for Excellence as well as for the Congress. For those of us in Singapore you will realise that actually this is the second CTE that LTA in Singapore is setting up. The first one of course the Central Expressway but that is quite a different matter. This one has got greater significance because it is about spreading transport excellence in the wider region, in Asia Pacific and it’s got a much higher international profile for which we are actually very pleased about, and maybe just let me touch a bit about the Congress that will be coming up. The Congress actually has two parts, one is the Congress where experts and leaders will present their papers and views and there’ll be discussion groups and so on.

And the second part really has got to do with an exhibition that we will hold and the exhibition will cover different areas, different transport solutions, transport technology, intelligence systems, operations management systems and so on. And it will provide a very useful networking and marketing opportunities for the land transport industry as well. And we certainly hope that with the set-up of the centre as well as the 2013 Congress, we will be able to benefit many people from the immediate region and beyond, government officials to academics to transport operators and we hope you will be able to join us at 2013 Congress which we think will be an exciting event. Shortly, we’re going to launch the website for this Congress and with the launch of the website, we’re actually going to start the process of inviting experts and professionals to submit their paper extracts for the Congress. So I look forward to the close collaboration between the Land Transport Authority in Singapore and UITP and I also look forward to your active participation in the 2013 Congress. Thank you very much.”

MC: “Thank Mr Chew. We will now be launching the SITCE 2013 website. You may go to www.sitce.org for more information. We like to request for both Mr Chew and Mr Alan Flausch to come on stage for the handshake and photo-taking. Thank you, sirs. Congratulations and welcome SITCE 2013. Thank you everyone. It is now my pleasure to invite the moderator and speaker for this afternoon session to take their seats on stage. I’m

honoured to introduce our moderator for this session, Mr Chew Hock Yong. Mr Chew Hock Yong is the Chief Executive of the Land Transport Authority. In his career with the Singapore Public Service, Mr Chew has held appointments in the Ministry of Defence, the Ministry of Communications, the Ministry of Home Affairs, the Ministry of Finance and the Ministry of Community Development Youth and Sport. He was a key member of the Bid Committee that won the right for Singapore to host the inaugural Youth Olympic Games in 2010. He also played a key role in Singapore's successful hosting of the Games. Currently Mr Chew is leading LTA to see several major transport development initiatives on land transport in Singapore. This includes the review of the land transport masterplan, the extension of the MRT network costing \$60 billion, improvement of the bus network, development of the second generation electronic road pricing systems and other transport initiatives to meet the mobility needs of Singapore. I shall now hand over to Mr Chew to begin this session. Mr Chew please."

Mr Chew: "A very warm welcome to all of you to the Mobile Cities session this afternoon. I believe there are many among us today who take a very special interest in city planning and when we talk about city planning, one of the very challenging aspects has got to do with mobility planning or transport planning. For me who work in the Land Transport Authority in Singapore, we think there are many, many significant challenges in this area. And when we talk about transport planning, we have to deal with various challenges, these challenges could include the rising number of people living in cities, growing population in many cities around the world, limited availability of land there are so many different competing users for the land, how we finance say big transport or mobility infrastructure projects and how we balance public and private transport as we plan for mobility in the city. So we are very delighted today to have with us a panel of distinguished leaders and experts who will share their experience and insights in the field of transport planning and mobility. So let me introduce our panel members today.

To my left, I have Mr Alan Flausch, the Secretary-General of the UITP. UITP is the preeminent international organisation on public transport. Prior to his appointment in September 2011 as a Secretary-General of UITP, Mr Flausch was the President of the Brussels Inter-Communal Transport Company which operates a network of metro lines, trams and bus services for Brussels capital region and during the course of his quite diverse career, Mr Flausch has also spent time in the legal profession, the chemical industry as well as the media sales industry. So that's Mr Alan Flausch and to his left we have Dr Alfonso Vegara. Dr Vegara is the founder and President of the Fundación Metr poli in Spain. Fundacion is an organisation dedicated to the innovation, development and transformation of cities and regions for sustainability. From 2002-2005, Dr Vegara was the President of the International Society of City and Regional Planners. In 2006, he received the European City and Regional Planning Award and in 2007 the Jaime I Award on Planning, Landscape, and Sustainability from the King of Spain so welcome Dr Vegara. To Dr Vegara's left, we have Professor Pan Haixiao from China. Professor Pan is the Professor of Land Use and Transport Studies in Tongji University in the People's Republic of China. Professor Pan is one of China's leading researchers in urban land use and transport planning. He has been involved in many urban planning projects and transport planning studies for local governments, including the Transport and Towns Development project for the Shanghai Region as well as the Shanghai 2010 Expo Transport Management Framework. So welcome Professor Pan. And to Professor Pan's left, we have Mohamad Nur Ismail Bin Mohamed Kamal who is my counterpart in Malaysia. He is the CEO of the Land Public Transport Commission Malaysia.

The commission is tasked to spearhead long-term reforms in land-based passenger and goods transportation. Prior to his appointment in 2008, Mr Mohamad Nur was a Special Adviser to the Ministry of Transport in Malaysia and at the Ministry, he led the Public Transport study as part of Government Transformation Program of Malaysia. To Mr Mohd Nur's left, we have Mr Bert Hofman. Mr. Hofman is the World Bank's Chief Economist for the East Asia and Pacific Region and Director of the Singapore Office, effective. Before moving to Singapore, he was the Country Director for the Philippines from 2007 to 2011. He has 20 years of experience in the World Bank, including 14 years in the East Asia region and three years as a lead economist for the China office where he led a team of that provided economic policy advice to the government of China. He has also worked in various countries, including Brazil, South Africa, Zambia and Mongolia. So can I invite you to warmly welcome our panel of leaders and experts?

So before we begin maybe I will just sketch out how I intend to run this panel discussion this afternoon. As a start, I will ask an opening question to all the panel members and each of the panellists will have about five minutes to make an opening speech. After that, we will go into a discussion format but to start off that discussion segment, I will pose each panel member a question relating to his area of expertise and after we have gone through each of the panel members, I will open up the discussion to the floor and please feel to raise any comments, any questions you have for the panel. So with that, I will start off by asking all the panel members this question, what are the transport or mobility challenges for cities in the region that you come from? And in your view what are the possible sustainable solutions that can help to address these challenges? So what are the challenges in cities, from the region that you come from and what are some of the possible solutions that can help to address these challenges? So if I may, I will start with Alan."

Mr Flausch: "Thank you, Chairman. I'm coming from nowhere because I'm from an international association, I'm coming from the world and I'll try to have a view which is a global view of how things should be going. The purpose of my introduction is just to say that if we're looking for new urban mobility system, public transport should be part of the solution. It's very modest statement. I could be much more assertive in this respect. I'll try to prove you in five minutes at the time where many countries have to make, and many cities, have to make the choice of where to go, do we want to develop the road system or do we want to go on a more collective transport situation, there will be a much better choice to choose the latter, because, because public transport is moving the economy forward, because public transport is helping to tackle all the environmental challenge that we are facing and because liveable city only possible with public transport. Let me first just start with some statements that I'm sure you would be sharing.

First of all, we all know that cities are the powerhouse of the economy. They concentrate today about 80 per cent of the world economic outputs and efficient mobility in cities create economic opportunities and social integration, enables trade and facilitate access to marketing and service. So mobility is today a major issue for cities. But at the same time where cities are power of the world, if we don't make it properly, it could become a catastrophe. If you look at fast urban population growth associated with urban sprawl, it's generating more and more trip in daily life, asserting significant pressure on transport infrastructure and natural resources, especially in emerging economies and we are just close to cities like Manila or Bangkok where you can really see these. If we continue the way we're doing it today, that is dominance of private motors of transport, traffic congestion will

gridlock cities if that's not already the case. Urban transport, energy consumption and greenhouse gas emissions will increase by 30 per cent worldwide by 2025 and affect not only the environment performance of cities but also risking and damaging their economy. So that's my assumption of making public transport the backbone of the urban mobility helps reconciling economic and environment policy priorities, which is actually the very definition of green growth.

As I said, many fast growing cities in emerging economies face crucial choice in terms of mobility models and transport and infrastructure which will engage them for decades. It is the right moment for them to choose public transport as the backbone of their metropolitan development. If I say so, it's also because it's my job everybody to advocate for public transport and I've seen some signs that there is a momentum today. Just to tell you what happens in the last few weeks, it's very recent, UITP was both in Rio for the big summit, Rio+20, and at the same time, we were also trying to convince the G20 resolution, they met in Mexico some weeks ago. And for the first time, we happen to succeed in having the word public transport to be developed in the resolution of the Basel institution. And as you may not know but it is a first, it's a premier as we would say because generally it's just forgotten and public transport and infrastructure is forgotten. And we need to seize that momentum because time is right for us to develop all points. Now why public transport, what argument can I post to say that public transport is part of the solution. The first of course you know that public transport generates business activity. If a city like Singapore or London has a strike of the public transport workers, their economies stop. So it shows with a wrong example that it's really blood and air for a city. Second, if you're investing in public transport, it's part of chain reaction in business activity and generate the value that far exceeds the initial investment. It has been calculated maybe up to three or four times the value of the original expense.

Besides creating economic activities, it's creating jobs. Public transport is generating 30 million jobs on the worldwide basis. It's usual for the car industry to claim that they are generating jobs. That's true they are generating jobs but we also are generating jobs and generally in some cities, public transport operating company and LTA, the same applies here in Singapore, are the first employer in the city. And from research to transport investment in the USA, was to have shown that investing in public transport produce as many jobs per dollar as in investing in roads. That makes us quite attractive in terms of economic growth. If we are good in economic terms, we're also fairly good in tackling environment issues. Public transport emits 3.5 times less greenhouse emission for passenger per kilometre than private car, everybody knows that. And if the chair of urban trips made by public transport would double by 2025, greenhouse gas emissions would be better in line with commitment made under international climate negotiations.

Urban transport and energy consumption would be decoupled from the growth in urban mobility. Such stabilisation of urban transport energy consumption will be beneficial for oil importing countries but also for oil exporting countries as the domestic oil consumption is usually is heavily subsidised. Finally, public transport supports relatively dense urban development patterns which optimise energy and resource efficiency. If I may refer to one of the most famous prominent urban economist, Mr Edward Glaeser, he's referring to the situation in China and India, you're saying over the next 40 years, India and China will continue to urbanise rapidly. Their decision about land use will have a huge impact on energy consumption and carbon emission. If they have higher densities and they use public transit, then they whole world will benefit. If they sprawl then we will all suffer from high

energy cost and high carbon emissions and I guess so that if India or China would choose for the western type development, we will be in deep, deep trouble.

Finally, besides having an economic drive and tackling the environment issue, I think public transport would also largely contribute to better quality of life in the cities. You know that of course that by using urban space more efficiently, public transport alleviates congestion and increase travel time reality and so by the way, it's also good for health, because if you use public transport walk and walking reduce obesity and heart diseases and it's also a contribution to reducing the costs of health interest. By all means, what I want to conclude is clearly that in an increasingly urbanised world, green growth relies on efficient urban mobility and adequate urban public transport infrastructure and service. Investing in public transport makes economic sense and it's part of greening of the urban economy. What better place than here in Singapore for this kind of matters where you can kind of been appreciate yourself and your personal experience, how good they are in urban planning, transport demand management high quality of service and high density of public transport over the last 40 years. Thank you."

Mr Chew: "Thank you, Alan, for making a very convincing case for public transport. I thought I was already very convinced of the benefits of public transport but after listening to you, I became even more so. So next maybe we can move on to Dr Vegara for your opening speech."

Dr Vegara: "Okay, can we use this light, please? I would like to make a small contribution to this debate by sharing one of the questions that for us is very important, which is what is the scale of the city. The city is the municipality, is the metropolitan area or the city of the 21st century has a different scale. So I would like to share with you in a few minutes some of the research done by our Fondation Metropoli in different parts of the world to try to understand the scale in which cities operate today in different parts of the world. You see, these are cities over one million in 1950, 2000, 2025. So giving a response in the planet to the role of cities is really a key question. So Fondation Metropoli is an international centre of innovation in cities and regions and we have been doing research in different parts of the world and I would like to share with you some of the conclusion. In relation with the new scale of thinking at the level of cities, this is a research done in collaboration with the University of Pennsylvania and Association of New York America 2050 you see the intensity in different roads in America, in United States and this is an hypothesis of the super cities of the new engine of the United States economy. If you see on your right, northeast, you see the densities between Washington, New York, Boston, this scale of thinking, these territorial scale is in my opinion, the new scale for cooperation and competition of cities around the world.

You see the airport system can be connected and this is the scale high speed train has a new importance for connecting these cities. You can have cities like Boston or Philadelphia with strong universities and they are using part of their talent living in Manhattan or the relationship between Washington and New York, the political capital and the financial capital. So these kinds of interactions are key for the future of cities. Another example that they would like to share with you is from Europe, this is the European Diagonal. You see these territories in the south of Europe, Lisbon, Madrid, Barcelona, Marseilles, Milano, these territories. This is an analysis, four hours from Lisbon. Lisbon is a metropolitan area of two million people but Lisbon four hours, when high speed train is finished, when you go out of

your home, you go to the station and then you travel, you're right to the destination. You go the working place. If the time is less than four hours, you can go and come back the same day. So this economic space in the case of Lisbon represents 60 million people. This is the (8:54) of four hours when high-speed train in Europe is finished of Lisbon. Madrid is 32 million, Barcelona 29 million people, Marseilles 53 because high-speed train arrive until Paris and Milano, have a catchment area of 80 million people. So the opportunities, the economic opportunities for these cities, are not based only on the scale of the cities but these new territories.

This is the European Diagonal space of 135 million people but not all the points of the diagonal are similar. We can identify points we call of special urban intensity, the diamonds, the diamonds of the diagonal. This is the new scale of competition and cooperation of cities in the south of European. You can see the Portuguese diamond, Lisbon Porto, the Mediterranean diamond in Spain, Madrid, Barcelona, Valencia, three main cities in Spain. The Cote D'Azur diamond, the Elgin diamond in Italy. So this is how we see the scale to solve these infrastructure, not all in motorways but also high speed train, which is the infrastructure of the knowledge economy. That will connect the port system in this new territorial scale, in this new scale of thinking. I would like to come back to the region around Singapore. This is Singapore. This is the Melaka Straits, diagonal, Vietnam, Kuala Lumpur, Iskandar, Singapore. This is a strong connection between these different cities and capital. This is Penang, this is Kuala Lumpur, Singapore and this is the 60 million people living in these emerging territories of the Melaka Straits diagonal. High speed train is an infrastructure that is very appropriate for these businesses. Thousand kilometres is too long for high speed train but the distance between Kuala Lumpur and Singapore is perfect or between Penang and Kuala Lumpur is the perfect distance to maximise the impact for creating this corridor, the cooperation and competition between cities along this corridor. That can be connected with the region particularly with China, with India, with other means of transportation.

So even if we analyse Singapore, this round being Singapore, particularly Iskandar, this dialogue between Iskandar and Singapore in the future will be key because Singapore has no more land and need to establish new connection. The economic space of Singapore can go beyond traditional boundaries. But it's not the backyard of Singapore what is happening in Batam, in Bintan or Iskandar, is strategic complementary and we need connectivity. We need connecting people, connecting companies, connecting minds in these new territorial space. For instance, the potential connectivity between Singapore and Bintan today 50 minutes by boat but in the future, high speed eco friendly blue connectors can transform Bintan into second home or even permanent house for people with strong interaction with Singapore. So this kind of connectivity, different means, different new technologies for blue connection and green connection can really allow to experiment and to apply in different territories. Not only public transportation but also new technologies for improving the individual mechanism of transportation. This is the eco technology. This is not an electric car, this is an Italian car that you can share and is pattern, coming from research from MIT in collaboration with bus entrepreneurs in Spain or even digital technology that can also connect people under the classification of activities. So I would like to highlight that the mobility, transportation, technology is serving or having a vision for the territory and I would like to share with you that the scale of cities is not anymore the municipality, is not anymore the traditional metropolitan areas. The new scale of thinking, the new scale of cooperation and competition between cities require new scale that will aspire new mechanism, new ways of connecting this cities."

Mr Chew: “Thank you very much, Dr Vegara for sharing with us the opportunities that can arise if we look beyond our borders and look at planning in terms of mega regions or diagonal. I think we can have a very interesting discussion about this later on. Can I next invite Professor Pan to share with us your views about the opening statement.”

Prof Pan: “I think mobility is a fundamental right for the human being so we need to be connected to jobs, service and we need to be connected with community. Also when the mobility improve to some level we can expect the economic growth. Otherwise, it will be very difficult. So we are facing, now we are facing very fast urbanisation. Population increase is far beyond expectation of the planner. Now in Shanghai we have 23 million people so it’s maybe several million and more than expected. And also we can find the economic structure and changes from the industry to more service-oriented industry. So now the motorisation of car traffic has been the major pollution in the city. Previously, it’s more from the industry. The central government has for a long time addressed the policy, tried to encourage public transport for many years but we also try to encourage car inventory promotion because China is very poor 10 years ago so we have to find some shortcuts for the economic development and learn from developed countries, we understand the car is key to speed up economic and development. So because of this policy, I think many cities are facing serious congestion and environmental problems and try to reverse this trends.

So we can find the MRT system, metro, public bike. All, lots of measures have been implemented to reverse this trend of faster modernisation but it’s really not so easy if the land user structure had been changed to follow the modernisation. In the case of Shanghai, because of the lack of resource and high density and lack of financial capacity, Shanghai has to accept not to adopt motorisation or Shanghai cannot adopt motorisation. So they’re trying to emphasise public transport and so Shanghai having introduced several, quite strong policies to control the car, growth of motorisation, such as the car plates auction. So if you want to buy car in Shanghai, you have to pay around US\$10,000 for the plate. It’s quite expensive, almost half the cost of a car. And at the same time, during rush hour, only when you have this plate you can drive on the elevated motorway so you can have the speed when you have this plate. And also the parking fare is very expensive. In 2006, one of the parking in the city centre is around US\$3 but it’s kept constant for a long time so we argue that maybe we shall increase the parking fare. And a lot of efforts had been put on the construction of metro line. Now we have 13 metro lines. Each day they carry about six to seven million passengers so we cannot expected if we do not have this metro line and Shanghai World Expo has provided us with opportunity to speed up with the construction of the metro line with the central government’s support.

Now we also have ambitious plans to extend the metro line to 1000-kilometre long. The transport in Shanghai is quite diversified. We still keep quite a large percentage of the tram routes with dedicated bike land. So it’s a modest split for bike or e-biker is still quite high. We have around 30 per cent of the people travel around by bike, e-bike or two-wheeled. So in this case we can find even the increase of the transport cost for the high income people. But for the low-income people, the cost for transport has not increased a lot because they use the bike and because of high density and high mixture of urban space, it’s possible for people to use bike. Now in Shanghai the average travel distance is just around 6.5 kilometres for one trip. It’s much shorter than compared with Beijing, it’s around 11 kilometres. So the experience in Shanghai shows that it’s a very important for government

policy intervention at very early stage of urban development or urbanisation. We should encourage multi-modal transport system or integrate multi-modal transport assistance and also integrate decision with land use, the spatial structure adjusting. So it's high density is really a treasure to facilitate short, connected society and the transport policy or urban mobility policy must be integrated as part of any urban policy."

Mr Chew: "Thank you, Professor Pan. I think you mentioned many challenges that sound very familiar and we also face the same challenges in Singapore and I'm sure there are many things we can learn from Shanghai. Next, I move on to my friend from Malaysia, Mr Mohamad Nor. Can I invite you share your views?"

Mr Mohd: "Thank you, Mr Chew. Good afternoon everyone. For Malaysia, transforming public transport is a key agenda for the government but unfortunately this is only a recent phenomenon. Only about three to four years after realising that in order to achieve our bigger national agenda, which is Vision 2020, to become fully developed nation by then, to become from a middle income economy to a full, to a high income economy, this requires a mobility to be sorted out along the way. So over the last 20 years, the focus has always been about moving cars. As a result, we have, nationally we have about 11 million vehicles registered nationally as well as nine million motorcycles for a country of about 30 million people. So this has created a need for massive network of roadways and expressways which we have built. But unfortunately, the demand keeps growing. We are adding about 500,000 new vehicles every single year. There's a limit to how many highways we can build. So in the last four years, the realisation is that we have to shift policy direction as well as money from investing in roads and private vehicles towards public transport and this is where the push to create a single agency came about. So in two years ago, by an act of Parliament, our organisation was born, the Land Public Transport Commission, to spearhead its transformation so it's not been easy. Let me just give a bit of current situation in Kuala Lumpur or KL. We have now about six million people in population, two million of which live around or within the city limit in KL. About two to three million live outside but commute everyday towards the city centre and based on current estimates, the model split between public transport and private is about 15 per cent public transport and 85 per cent private. And this has created massive congestions every single day and threatening our ability to create Kuala Lumpur as an attractive city, as a liveable city, to create the attraction for professionals and new economic activities to come to KL. Massive improvements have been planned. For now that 15 per cent that commute by public transport, let me just give you the current options that they have. For urban rail, we have five lines totally 280 kilometres of tracks. This includes two heavy commuter lines, two light rail transit line as well one monorail. Despite this limited network coverage and integration points, these services carry about 500,000 passenger trips every single day. For buses, KL is served by 14 companies or operators running about 2000 buses and carrying about equal number of 500,000 passengers a day. However due to lack of bus lanes and comprehensive route planning, these services are a bit problematic in terms of reliability and efficiency. For taxis we have about 37,000 vehicles serving KL and surrounding suburbs. However due to low fares and lack of enforcement, these taxis are very unpopular among locals as well as tourists alike. So moving forward we have drafted a public transport masterplan for Greater KL-Klang Valley area and many initiatives identified can be grouped into four basic strategies. First is about, no surprise, infrastructure and capacity building.

These are physical capacity. Second is about regulatory strengthening, third is about service excellence and fourth, the most difficult part is about collaborative planning and governance. So on the first one for infrastructure and capacity build-up, we are on the verge of building our first MRT line so line one will run about 51 kilometres from the northwest to the southeast, running through the city centre. This is about to start construction next year and we expect it to be completed by 2017. We are also conducting feasibility studies for lines two and three. For our light rail transit systems, we are extending those tracks as well as increasing capacity whereby new cars doubling in terms of capacities and reducing heat waves. We are also, we have also identified 12 corridors for BRT, we know because this could be developed quite rapidly. Two of these corridors are starting next week. For strategy number two, which is regulatory strengthening, there are three key focus areas. Number one is about developing the right policies and operating business models for our bus operators because of especially in outlying areas, low ridership, low fares translate to into big operating gaps. So we have to develop the right incentives for these operators to keep at a certain service level. The second is about fully migrating from vehicle-based licensing to operator-based licenses of course with the right conditions and rules attached to them. Third is about enhancing our ability to monitor and enforce all these new regulations. Strategy number three, service excellence, this is about bringing the standards of our operators from very fragmented small-scale enterprises towards becoming world-class operators. This will require a lot of rationalisation as well as coaxing for them to merge and all that. Strategy number four, collaborative planning and governance. This is about getting all the different governments agencies to work together and working towards one common goal. This is about developing the frameworks and mechanisms. So in terms of challenges to get all these things done, I can think of three immediately. Number one is about funding because currently all our projects are being funded directly from the consolidated funds and we know that this cannot go on forever. So it's about maybe finding special taxes or levies specifically aimed for public transport development fund and also to find the right PPP structures to encourage private investments and also as I mentioned before to find the right operating business model and the fare structures to encourage operators to behave. Second, because this is a new area for us, human capital, to carry out these projects as well a policy reform. This is a critical area and challenging for us right now. And third is about political will, it's easy to start but it's also easy for politicians to lose their will along the way especially they deal with land acquisitions and all that. So I think that's all I have for now. Thank you."

Mr Chew: "Thank you very much, Mr Mohamad Nor. I think from what I read about your plan for KL and as well as what you shared with me the last time we met, I think you have a very ambitious plan and KL will be a very, very different city when you've completely carried out your plan. So I look forward to that with a lot of excitement. Can I invite now Mr Hofman to share your views about the opening statement?"

Mr Hofman: "All right, thank you very much. I am here as a chief economist but I'm also here as the director of the Singapore office where actually the focus of on infrastructure finance and urban development in trying to support these around the world to help our clients better. So I am actually going to talk mostly about finances. But I'm also an avid consumer of at least from Asia urban environment and Asian urban transport systems and I think I've seen the best and the worst and I've lived in Jakarta and Manila and Beijing and in Singapore and I leave it to you to determine what's the best and what's the worst. But I do

can clearly see that efficient urban transport systems do matter for the efficiency of total urban life and productivity of people. So from a development perspective, this is a big issue and it's going to be a bigger issue going forward. We've all heard the numbers but nevertheless I'm going to repeat them. We are going to have a population of nine billion by mid-century and urban share of that is going to increase from 50 per cent to 70 per cent and that means 2.8 billion people more in cities. That's 14 Singapore every year so that's a huge challenge. If you think you got Singapore right, there were 14 times every year and that's a huge challenge if you think about how to get urban transport, urban systems, the urban transport system as the core, the lifeblood if you want of the urban life right. That's a real challenge.

It's a real financial challenge as well and frankly we don't have any good numbers. Some of my colleagues try to play around some numbers and I like playing around with numbers as well so I presented to you if you look at the investment needs for that, the total infrastructure needs for urban development, we estimated around US\$750 billion a year and developing only but most of the action is actually in developing countries. In 2005, under current prices it would be more. 40 per cent of that is just road infrastructure so if you look at that and you look at urban side of that, you're talking about US\$200 billion and current price probably US\$300 billion every year in urban road infrastructure financing. McKinsey did a different methodology and looked at what is necessary every year and they came up with a whopping US\$600 billion a year in urban infrastructure and transport infrastructure but they include airports and harvest and other things which the previous estimates does not include. Irrespective, that's a huge, huge number.

The World Bank lending programme for this year for everything, from education to healthcare to and a little bit, quite a bit of transport, was \$40 billion and if you look at the pressures on the budget of governments around the world nowadays, this is really a hard number to come up with. If you look at the financial sector developments currently going on not just because of the crisis and not just because of the European situation but beyond that Basel3 and different, different financing, different pressures on the financial world, that's a huge challenge to get that amount of financing going forward and given all the competing demands because we're not just financing urban infrastructure. As a government, you finance many other things. So the challenge is very big and we got to make it right nevertheless because if you miss it, clearly the efficiency of an economy, clearly the efficiency of 80 per cent of your economy is going to far less than we have an efficient urban transport system. Second, considerations from the finance. I believe if you look at urban transport systems now, you must deal with climate change. There's no other way, I feel that we're going to have a solution for climate change or we're not going to have a solution for many cities that are going to be under water.

Water transport is going to be very important for many cities but if so, it means that the calculation of the economics of urban transport system is completely different from what it is today. Since you're putting systems place that are going to last 100 years, you have to take into account some notion of what's going to happen with climate change. I don't know if you want to put \$10 on the trump card or \$20 or \$50 but whatever number you take, you're going to come up with a completely different design of your urban transport system and I would just like to emphasise that because I think these are very, very big, to keep growth going, to keep it sustainable locally but also globally. As a matter of fact if you look at the really local effects of these big pollutants for climate change, even on the basis of local calculations it would come to a very different choice. If you were to take all the externalities

of urban transport and all the health effects of urban transport, of individual car ownership let's just say it, you would come to a very different structure.

So the key challenge in my view, I'll summarise it, it's been mentioned but I'll summarise them as minimised. Minimise the need for transport, optimise within the transport solution and then sustain financially. And again the issues have been raised, the solutions have been mentioned and there's one that's density. The changing of the distribution of activities in the space, in the urban space and depending on how you do it, you get a very, very different result. We have our colleague from Shanghai, which is a very different kind of city than Beijing actually in two ways, in the way that the city is designed with Beijing far more emphasis growth is in the suburban areas and Shanghai as *densified* its city. But also in the policies, by the way, and the policies in Shanghai, Shanghai while you pay for your license and Beijing you get them for free maybe because there's lots of red licenses that come, official cars, they don't pay. Shanghai is far more expensive that means Shanghai has far fewer cars per person than Beijing and Beijing has frankly, no matter whether they have six ring roads or not, they now have traffic jams. You can't build against that individual demand. You have to manage it and you have to build your cities such that you can accommodate a far more efficient mode of transport, not just public transport but also the walking and the bikes. When I first came to Beijing in the end of the 80s, it was just bikes. You see very few bikes nowadays in Beijing I have to say.

Second, supporting more sustainable modes of transport including the public transport but of course the other modes of transport as well and from the Netherlands where cycling does come naturally, but walking and shortening the trips is going to be very important as well. I'm not talking about the inter-city mobility. I was fascinated by the presentation but I cannot speak, I won't speak about that. I do believe that the crux of getting sustainable alternative and sustainable modes of transport, including public transport lies not just in the management of the public transport but also in the management of the individual car ownership. If you can't make it much more expensive with the car ownership, individual car ownership, you won't get people into the public transport and so that's a politically unpopular move to make and you mentioned it already. But getting the pricing right on both sides is quite important for the development. I mentioned the reduction in private vehicle use. And the fourth assuring financial sustainability of transport systems and no matter what, even if the individual use it as (12:03), if it's financially sustainable, it won't last. So bringing this financial picture in place and again no matter what, whether it is from fees, whether it's from taxes, whether it is from viability, from contributions directly from the budget, the systems that you build have to be sustainable because if not they will not last. That's easily said than done.

I mentioned the pressure on the financial sectors side, I mentioned the pressure on the budget but there's lots of institutional issues that keep countries and cities from bringing about sustainable financial systems and that includes the governance constraints and not just the governance constraints. There's coordination between departments that's important but also governance as in making sure that money is being used well. The legal constraints, it's surprising to me how many cities in East Asia still lack the authority to issue bonds, still lack the authority to raise money independently and rely on very inefficient inter-governmental fiscal arrangements. That simply does not cut it in terms of volume of money. And finally, yes, to make things sustainable people have to pay for it. How much one pays one can determine, that is a policy choice but you either through taxes or through fees or through something else and it's the political challenge that many countries in the region

still have to overcome, the political challenge that actually you get what you pay and if you pay a bit more, your transport system will be far better. Thanks for now.”

Mr Chew: “Thank you Mr Hofman for sharing your views. I think you’ve highlighted that in the coming years, the demands for infrastructure will be very significant and it’s very important that we are able to look for solutions that are sustainable both environmentally as well as financially. And I think many governments around the world will be looking for different ways to finance all these projects that will be coming up and there certainly will be scope to look for innovative, financing solutions to some of these projects that are coming up. Okay, I think all our panel members have had the chance to make their opening statement. I’m going to do a bit of a change of plans here. I intended to ask each of them one follow up question but I’m very conscious about the time and I think it will be more useful if we have a dialogue and we open the session to the floor so that any one of you, if you have a question please feel free to ask. We also have this feature called the Pigeonhole where people can, participants can pose questions online but I will give preference to the delegates here today who are prepared to come forward to the mike and ask the questions. So when you come forward, please give us your name, where you come from and organisation you’re from and then post the question. Thank you.”

Question: “My name is Pier Lacont, the Foundation for the Urban Environment in Brussels, Belgium. My question is to Mr Hofman. You said that carbon needs to be priced, that is of course something that you cannot disagree with. So my question to you is how can the World Bank either advise or help in any way the countries to become aware notwithstanding the political difficulties that there is a need for that? The European Union has tried to introduce carbon taxation. It has not succeeded then it has tried the emissions trading system which has not succeeded either. Now it is trying to have the emission obligations for the airline industries. It’s maybe going to be successful but not sure yet. So the question to you is with your experience with the World Bank, and I’m very pleased to see that you are presenting the pro-transit of the element of the World Bank, what is your opinion? Thank you.”

Mr Hofman: “I shall take that. Well, thank you. It’s frankly also inside of World Banks that is half debated whether and how we should put a price on carbon. Of course, there’s a global negotiations going on and we hope that at some point there will be an agreement which will have an implication of a price for carbon, irrespective whether it’s going to be through tax or through global permits and trading. Economists like carbon trade because it’s so efficient. That is also very hard to actually agree on it apparently. But what I find more encouraging is that a lot of countries have tried and not just Europe, have tried and to some extent succeeded. Europe had its disadvantages in introducing the systems as well. My country actually had a carbon tax. I don’t know if they still have it but you see increasingly other countries starting to adopt similar systems as well. China has an experimental carbon trade system working as we speak. Carbon tax in Australia has been introduced. Korea is looking at similar systems.

So you find countries that’s voluntarily already constrained their behaviour maybe in anticipation of a future deal and that may very well be the case but it’s also makes perfect sense because then you say we might as well start pricing carbon better now so that the investment will we put in place now will be still efficient when that price actually come. So that’s the philosophy. I do think it depends to some extent on the credibility of the global

negotiations but to some extent also, if you want on individual initiatives in countries and thirdly, I believe, and that's where we do something, in directing financial flows to the countries that do the right thing. They may not explicitly price carbon but we do have financial flows, very concessional financial flows for countries that do try to find a lot of carbon path that may not be enforced through the carbon tax or carbon trade but that's that we try to reward and we have not limited but quite considerable means to our availability and hopefully these needs will increase. Currently, developed countries put money in the World Bank in order to finance low carbon technologies in transport, in mainly transport and energy, but not just that. There were a number of things underway that which I think start to play around with that notion and it's not yet mainstream, it's not yet broad-based but I'm encouraged it evolved from developed and developing countries. There's quite a bit of enthusiasm."

Question: "Hi, I'm Paul Abbon from Eurocities, a network of European big cities. I regret we heard much more about transport than we have about mobility in this session. And in particular, it struck me as remarkable that I've seen not a single bicycle in Singapore. That's one of the questions on the Pigeonhole. I thought you might not want to answer it so I thought I'll ask it direct."

Mr Chew: "Actually if I can share in terms of mobility in Singapore and what the Land Transport Authority in Singapore tries to do is to aim to provide a whole range of mobility options so it's not just about owning a car, it's not just taking a public transport, about taking the train but all the different options in between, including walking, taxis and including bicycles. So what we do in Singapore is we are starting to, with the idea of having bicycles as the final leg connecting to the truck transit route along the MRT lines in Singapore and we are creating where we can and where space permits, bicycle paths in our towns. And we're going to increasingly do that in more and more towns in Singapore and we also we have this vision that one day we may want to connect up all the paths so that it's easier to get from one place in Singapore to another if you choose to cycle.

And sometimes there may certain opportunities that open up to us in terms of a longer bicycle path, for example if we have this corridor down middle of Singapore from north to south that was vacated by the Malayan Railway Line. I mean, there is an opportunity to explore whether we could have some bicycle path there as well. And I suppose what I can tell you also is that in the Land Transport Authority in Singapore, we actually look at this issue of cycling very seriously and just this past year I appointed one of my senior management colleagues as the cycling champion. Actually, you may be glad to know that's he's actually sitting right here in the middle. You can have a word with him about that, some of your ideas as well. So we are quite serious about it. There may not be that many bicycles in Singapore today, there may not be as many bicycles as they were in China in the 70s or 80s but I think Singapore will become a more conducive place for cyclists in the coming years."

Question: "Good afternoon, Lord Mayor Stephen Yarwood from the city of Adelaide in Australia. I just want to know, I didn't hear much integrated transport so I appreciate that last comment. I think the integration of transport will be the key. Also, I agree, I believe that cities throughout the world would very soon be competing for bragging rights as leading cycling cities. I think this is going to be the fastest growing mode of transport in cities throughout the world. In fact, I invite people to come to Adelaide in 2015 for the Global Velo

City Conference where we've been fortunate enough to win that conference so we hope to see you there. But my question is about electric cars and electric vehicles. I'm an electric car driver and frankly once you've driver an electric car, you will never, ever go back. They are absolutely magnificent vehicles. But I'm curious about just as petrol has driven engines have defined cities in the 20th century, what's going to happen in the 21st century when it costs three cents per kilometre in electric car or 10 cents per kilometre to ride an e-bike? Electric bikes are going to absolutely transform our cities and I'm curious as to whether you are planning a future where petrol driven engines are literally dinosaurs."

Mr Chew: "Thank for your question. It's a question specifically for Singapore or it's more for electric cars?"

Question: (inaudible)

Prof Pan: "... source of energy in China. 70 per cent of energy from carbon so electrical cars cannot contribute to environmental problems and also can contribute to congestion so maybe electrical bike can be to some degree be the contribution."

Mr Mohd: "... looking at the possibility of not only encouraging our operators to use electric bus but also creating a new industry in terms of really looking through the value chain of an electric bus where we can grow our own domestic industry. But in terms of putting it into operations, currently when we explored last, an electric bus costs about three times more normal bus, diesel bus. So in a country where basic transportation needs is a problem, so this is the dilemma that we are facing, whether we start with the e-bus investment now and deny two-thirds of the other service or do we just go conventional and serve as many as we can. This has been a bit of a challenge that we are sorting through."

Mr Flausch: "Yes, maybe a comment. I think indeed electric cars are nice. They will help solve some of the environment problems that electric cars, normal cars today are causing. But let me tell first that a green traffic jam is still a traffic jam and so it will not solve the congestion stuff. From what I heard from the car industry, the most optimistic people believe that it will not grow as much as 10 per cent of the total rate, even the ones that are pushing as much as possible electric cars. It'd be great. It's much better to have electric cars than fossil cars so no dispute about this. I think the public transport industry needs also make its own work and transform most of the buses into electric mobility. Electric mobility in Europe is really a hit now and a country like Germany is trying to converge all public transport to electronic mobility. But what is, I'm afraid it will not save the car industry and I was reading recently, a special supplement in the Financial Times London about the future of car industry and obviously they are investing a lot of research. They are very worried about the future of the car industry model of today. Chief strategist of GM, the big group, is just wondering how they will survive the congestion because it's not the car itself that's the problem, it's the accumulation of car in the city. And today they realised, in the car industry that people are leaving the car model just because queuing for one hour and half everyday or more is no longer acceptable. So they're looking to make smaller cars, electric driven but still as I said a traffic jam, a green traffic jam is still a traffic jam."

Dr Vergara: “I would like to share with you a comment on technology and the design of a city. Even if we improve the quality of the buses, the quality of the trains, the quality of the cars, at the end of the day you need to connect human, people, physical space and you need to share this space. We should consider long-distance connectivity, which is very easy to solve, very easy, particularly along corridors. Public transportation system can really help a lot. But the most difficult part of urban design is the last 10 minutes, the last kilometre, how you connect with your final destination. So internality is very important and urban design is key. In the industrial economy, price of the land, the good connectivity between companies keeps up the competitiveness of the city. In the knowledge economy, quality of place is the key. What is really mobile is the talent, talent is mobile. They can live wherever they want and we are competing for attracting talent, we are competing at the end of the day for improving the quality of place. So designing a place for human interaction, the quality of public space which is the democratic part of the city and how to combine technology with people, this is something that we need to think a lot of in this so micro-mobility is important. In our foundation, we began five years to create new urban infrastructure. Instead of having roads coming to the city, transforming these motorways, urban motorways into eco boulevards. Eco boulevards require having not only cars but also public transportation, green line, cycling, pedestrian and urban intensity along this corridor. We developed one in Casablanca that can be a standard between Casablanca and (inaudible). In the future, the city of the future probably motorways will become eco boulevards. And I think it’s a great debate not only about technology, of course, but about the kind of city we would like to have and how people will interact with the city and with the transportation system.”

Mr Chew: “Yes, indeed at the end of the day, it’s about the kind of city that we want to have and the kind of city we want to live in. So I’m very conscious about the time. Can we just, if there are one or two more question try and take them and then we can try to wrap the session. I see one hand there and another one. Maybe we just take one final question.”

Question: “Hi, Robin Rajack from the World Bank. It seems that most of the discussion on mobility was around carbon footprint or transportation infrastructure. I just wonder if any of the panel would like to comment on mobility from the perspective of connecting the poor living in locations where the land price is not subsidised but still having good access to where their jobs are. We’ve seen experiments where it has been the other way around, where land prices are subsidised and eventually the poor basically cash in that subsidies. So any perspective of the other way around, perhaps even with transport subsidy for the poor to live in unsubsidised land and still have access to jobs?”

Mr Chew: “Rephrase that question, can you phrase your question again? So you’re saying that?”

Question: “I’m sorry. I just wonder anyone can comment on mobility from the perspective of it, say in the function of connecting the poor while they live in a land that is unsubsidised, which often mean further out rather than subsidising the land and then they just cash it in and move to somewhere else.”

Mr Flausch: “One of the roles of public transport is indeed what we called, I don’t know whether the word existed in English, inclusion, social inclusion. It means today in our society if you cannot move, you’re kind of a dead citizen so you have to move, to be able to

move to do what because unfortunately urban planning has not been properly made so that generally you don't live close to your job or close to your school for most people and you need to move and public transport provide you with that. Now it may be strange but in cities like Paris, land is very expensive in the centre of Paris and inexpensive at 80 kilometres from Paris. At the beginning when the fare structure was built, the idea was poor that need to live away from 80 kilometres from Paris would even pay much more in terms of public transport. So what happens is the fare structure was changed to make sure that proportionately the people living 80 per cent, 80 kilometres from Paris would pay more per kilometre than the guy living in Paris. It sounds like a trains system, which is not distance-based but there was some sort of attempt to reduce the social gap by making public transport available. Now there is even a country, this is mine, that's been totally crazy. Instead of going into density of city, they love the urban sprawl to that extent that people now can buy at 50 kilometres from the capital city. They can buy cheap land and the state is subsidising fully with the employer, fully the transportation. That may look great but in fact people commuting everyday by 100 kilometres don't have a good life and I don't think this is the right solution to have all the taxpayers subsidising the transportation. Having the life of those guys is terrible because it's least two hours of commuting each direction and having employee exhausted when they arrive at the office. But that's an employer is speaking."

Mr Chew: "Thank you. In view of the time, I have to close this session but actually we have covered quite a few issues ranging from public transport to planning for mega regions, to planning for specific cities like Shanghai, KL and the various financing arrangements that are possible. It remains really for me to thank my panel members for their sharing of their experience and their insights and ideas and to thank all of you for being here today to be part of this discussion forum. Thank you very much."

[End of Transcript]