

Tuesday, September 15, 2009 13:00-14:15

[Parallel 6] The future of Asia's urban transportation systems

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Ikuma

We will now hold a panel discussion on the theme, “The future of Asia’s urban transportation systems.” Due to the depletion of natural resources and the need to accommodate the environment, much focus has been placed on such alternative energies as solar and wind power for future traffic systems.

In the post-Kyoto accords, one long-term goal is to cut greenhouse gases to 70 percent of 1990 levels by 2050. This would mean that in the automotive division, emissions would have to be one-tenth of what they are now.

While in Japan, domestic cars have high fuel efficiency and the train system is well developed, by international comparisons, Japanese railway use for cargo transport is only 4 percent, just one-tenth of the US. Though considered highly efficient, Japan’s transport system of people and cargo leaves much room for improvement.

To solve these problems, such solutions as a shift from gasoline to electric cars and a proposal for LRT systems are being utilized, but such patchwork technological solutions may not be sufficient. I believe a more comprehensive modal shift (reengineering) of the overall transportation system is required. In addition, shifting to a lowest carbon system would create big new businesses and industries. A reevaluation of this system would include the re-empowerment of the railway system, which clearly emits lower levels of greenhouse gases.

Abe

I founded LightRail four years ago after working for 17 years for JR East Railway Corporation. We are engaged in transportation-related consulting, including LRT. Today, I would like to talk about three things regarding a new transportation system that integrates cars and trains.

First, I’d like to explain the six problems related to our over-reliance on automobiles: inefficient use of space, inefficient use of energy; burden on the environment, frequency of traffic accidents, restriction of movement for those who cannot drive, and the decline in urban centers.

Second, I’d like to propose my prescription for solving these traffic problems. While some improvement can be gained with electric cars and ITS regarding traffic jams, safety and environmental burden, they do not offer a fundamental solution to the six problems I described earlier. A huge increase in cars is expected in Asia’s newly emerging countries. For a fundamental solution given this situation, an integration of trains and cars is indispensable.

Railways offer strengths in terms of speed, safety, volume, energy efficiency and low environmental impact. Cars offer door-to-door transport that is low-cost at small volumes. JR Hokkaido is developing something called DMV, a car that can travel on both railways and roads, opening up the possibility of a new form of transportation that integrates trains and cars.

Third is the issue of how to differentiate use of above-ground and underground transportation systems. Currently, cargo is mainly transported on ground or elevated roads while people are mainly transported underground. This thinking has prevailed for some 50 years, but perhaps it is better to transport people above ground and cargo underground. I would like to propose a new image of traffic infrastructure for the decades ahead, one where our distribution is brought to underground networks and LRTs, railways, electric cars are brought to surface and elevated roads.

Mimura

I want to talk from a perspective of decades in the future, about whether or not Japan will even be in a position to develop future scenarios for Asia's transportation systems and whether Japan will remain a leader in the automobile industry.

We at Better Place are conducting trials of a battery switching method with the Ministry of the Environment and the Ministry of Economy, Trade and Industry. Japan possesses top caliber battery and charging technologies, but they are not necessarily applicable to electric cars, making current Japanese technologies still immature.

In Japan currently, electric cars are built on the assumption that they will be used for short-distance travel, such as for daily shopping. We have applied a totally opposite assumption with the belief that electric cars are most appropriate for long-distance transportation, such as in taxis. Currently popular hybrid cars, because they are not zero emissions, are no more than a short-term solution to tie us over until 2050. However, electric cars, which are supposed to be the car of the future, still have the image of not being fully practical because of limits in travel distance and battery costs. Due to these weaknesses, and incorporating the perspective of laying down infrastructure, we came up with the idea of battery switching type taxis as a niche segment to enter into the electric car field and are conducting trials.

My proposal is to build a consensus for having taxis become the catalyst for the popularization of electric cars. Then, through national policies, make Tokyo's entire taxi fleet of 60,000 cars electric and promote this model to other Asian countries.

Ichikawa

I want to talk about how new regulations and government policies will help transform our transportation systems. To create a new economic society that recognizes the limits of our environment, public transportation must play a major role. Cars will continue to have many merits, but as for the negatives of an automobile society, we have the three traditional problems of traffic accidents, air pollution (CO2 exhaust) and traffic congestion. The further expansion of our automobile society has led to the disorderly use of land resources and global warming from CO2 exhaust. An increase in the number of traffic accidents involving the elderly is also a problem. To realize what the two others talked about, we cannot deny the existence of an

automobile society, but rather, must determine how to best differentiate use of various transportation methods.

Initiatives, such as the idea called Traffic Cells, have already been taking place in Western countries from the 1980s and 1990s. These initiatives are limiting the use of autos and promoting the use of mass transit for moving around in the city, and have made mass transit far more attractive.

Prompted by a 1996 initiative in Tokyo's Musashino City where they introduced a community bus called, "Mu-Bus," new types of mass transit are being developed. But so far, all efforts have been sporadic. To build an urban transportation system that is attractive to users requires increased involvement of the government. Of course, it goes without saying that the private sector will serve to enhance the quality of services as well as cut costs. There is a problem of the lack of one person held accountable for the point of contact between various modes of transportation. To overcome this fundamental blind spot in mass transit systems, the government is expected to play a major role enhancing the continuity of transportation by, for example, coordinating car sharing with public transportation systems, or creating some sort of bridge between other modes of non-car transportation, such as trams, buses, bicycles and trains.

With an aging society, we need to consider whether or not subways, given the difficulties of getting on and off them, are really convenient. We should take a fresh look at current transportation systems and with municipalities working together with the government, re-evaluate the design of our urban transportation system.

<Q&A>

1. *In compact cities and other such initiatives, there are zoning and other regulations to bring people together in cities, but this sometimes results in development around train stations not moving forward as hoped.*

Ichikawa

In Toyama City, for example, where urban planning of their mass transit system revolves around street cars and trains, they are trying to place housing and commercial properties necessary for daily life near the train station to create an area where everything is within walking distance. But in suburbs, stations are having problems because they fall under the category of non-urbanization zones, which makes development difficult under the current urban planning system. In other cities as well, stations are often located in non-urbanization zones, creating a problem in compact city development. I hope that municipalities will bring up this issue with the government and push for changes in regulations.

Abe

All over the country, there are cases where stations are located in non-urbanization zones and development is prohibited, which means that urban development with stations as the center is not realized. Urban planning must be linked with transportation. Governments should change the status of areas with stations to urban-development-designated zones.

Ikuma

To determine the ideal state of transportation systems, we need to discuss regulations.

2.1.1 Considering the popularity of cars today, wouldn't it be difficult to expect growth in trains just based on a comparison of merits/demerits?

Abe

My proposal today is to merely recognize the strengths of railways. There are many trains not effectively utilized, especially in rural areas. Just saying, "trains are inconvenient but environmentally good," will not lead to greater use. To have users choose trains over other options requires an innovation of services. Only then, will they become an integral element of society.

2.2 Do you have any specific ideas to popularize electric cars?

Mimura

I suggested the use of taxis today stating economic merits, but to expand further from a marketing viewpoint, let me say the following:

- 1) Taxis will enable users to experience first-hand the driving comfort of electric cars and provide an opportunity for the customer and driver to exchange opinions;
- 2) Taxis are very prominent. Though they account for only 2% of the total number of cars, in terms of distance traveled, they command 20% of the total.

3. *The cost of lithium ion batteries for EVs is too high, with a commercial vehicle costing some 70 million yen. Because of cost-related issues, I wonder about standardization efforts. It is hard to break away from gasoline cars, and because of the high risks involved, many companies are reluctant to do their own manufacturing of lithium ion batteries. Do you have a concrete vision of how the pyramid-shaped industry structure of gasoline cars will change with the advent of EVs?*

Mimura

It is relatively easy to recover costs when it comes to taxis. In terms of standardization, we are not expecting automobile manufacturers to take an initiative. Mr. Shimizu of SIM-Drive pointed out that there will probably be a standardization of size. In terms of how this will change the structure of our society, this is something the demand side, not the supply side, should determine. I have some sense of crisis regarding manufacturers from newly emerging countries, such as China. For automobile manufacturers, this is a Pandora's Box. Sooner or later, someone will open it, so I think Japanese auto makers should do it themselves.

<Final Comment>

As a final comment from each of you, what does Japan need to do to lead?

Abe

Promote the innovation of railways into a transportation service that consumers can select.

Mimura

I am worried that environmental projects do not meet with opposition. With a sense of strategy, we need to develop hypotheses and have companies work out the details at a concrete level. At Better Place, our hypothesis for the popularization of electric cars in Japan involves taxis. We will start work next year on testing this hypothesis.

Ichikawa

Ultimately, we need to break away from our over-reliance on automobiles and create legal systems that give preferential rights to public transportation in cities. To propose a public transportation service that is easy-to-use from the customer's point of view, such as in terms of fares, the government and municipalities must be actively involved. Because of a declining population and other factors in regional towns and cities, the private sector can only do so much. Enhanced public (government) involvement in urban transportation will also provide an impetus in creating new businesses in the private sector.

Ikuma

We need to create a vision of this major transformation in our transportation system.
