Virtual Industry Summit 2020

～ Session 3: Spotlight on high-speed rail development～

Summary

■ Seminar Session Overview

Sponsor: Global Railway Review

Date and time: July 30, 2020 (Friday) 19:00-21:00 (Japan time)

Attendance: Moderator : Torkel Patterson・Vice Chairman, International High Speed Rail Association (IHRA)

Speaker ① : Mark Thurston・CEO, High Speed Two (HS2) Ltd.

Speaker ② : John Chen・Senior Advisor, Taiwan High Speed Rail Corporation

Speaker ③ : Sandeep Kumar・Director/Electrical & Systems, NHSRCL

Speaker ④ : Bruce Armistead・Director of O&M, California High-Speed Rail Authority

Speaker ⑤ : Rick Harnish・Director, High Speed Rail Alliance

■ Summary of each presentation

Speaker ① Mark Thurston・CEO, HS2

Mark Thurston outlined the British HS2 project and introduced that the following effects are expected through the project: ①Capacity for economic and social development by realizing high-speed mass transportation between major cities, ②Improvement of regional connectivity by networking with existing railways, ③Reduction of CO2 emissions by a modal shift from car/plane to railway for long-distance travel.

Speaker ② John Chen・Senior Advisor, Taiwan High Speed Rail Corporation

John Chen outlined how the Taiwan High Speed Rail which adopted the Japanese Shinkansen system, and discussed the company's successful economic growth up to their recent COVID-19 countermeasures. He emphasized that for sound HSR operation, optimizing the system life cycle cost is more important than the initial introduction cost. As for the challenges and expectations in the future, he raised the issue of the necessity to control the price in system maintenance and upgrade, and to develop a cooperative relationship with Japanese manufacturers.

Speaker ③ Sandeep Kumar・Director, NHSRCL

Sandeep Kumar outlined the Mumbai-Ahmedabad high-speed rail project which is adopting the Japanese Shinkansen system, and introduced NHSRCL's expectation that the technological development of India's railway industry, job creation, regional vitalization, reduction of CO2 emissions, etc., will occur through the project. As for their challenges in the future, he raised issues of undersea tunneling and engineer training as examples. He also introduced that in addition to the Mumbai-Ahmedabad project, India has seven HSR projects current planned throughout the country, aiming for further national development by improvement in connectivity.

Speaker ④ Bruce Armistead・Director, California High-Speed Rail Authority

Bruce Armistead outlined the California high speed rail project and introduced its progress in construction financed by federal and state government grants. He emphasized the project's job creation effect, employing more than 4,000 workers in the region and that the construction has made progress even under the current COVID-19 pandemic. He consistently referred to the cost of HSR as an investment in the future of California instead of an expense.

Speaker ⑤ Rick Harnish・Director, High Speed Rail Alliance

Rick Harnish introduced High Speed Rail Alliance as a nonprofit organization that aims to reduce CO2 emission and provide economic opportunities through HSR development in the US. He also outlined its activities, the necessary conditions for high-speed rail to function in the country, the benefits when realized, and approaches for obtaining political support, etc., by giving examples over the California High Speed Rail project. He also expressed the necessity of US government's investment in HSR and improvement of railway network convenience. Rick introduced a model for dedicated line HSR service between large city pair hubs which would connect to local modes of transportation.

■ Key Questions

Q: Do you see any long-term effect of COVID-19 on high-speed rail?

A: Mark Thurston・CEO, HS2

Construction of HSR takes time. Therefore, by the time HS2 is completed for example, the world will probably be very different. However, regardless of the pandemic, railways connecting UK's major cities are reaching their full capacity. Domestic aviation is now facing difficulty, but the demand in domestic travel will continue to exist. Considering people's demand of fast mobility and conscious in environmental issues, I believe that HSR will be the only way to unlock these problems.

Q: What were the lessons learned from Taiwan High Speed Rail to share with others?

A: John Chen・Senior Advisor, Taiwan High Speed Rail Corporation

At the beginning of the HSR project in Taiwan, we considered to integrate various systems. However, considering the life cycle cost including maintenance, we later noticed that adopting a simple system is the best. In addition, in order to maximize the performance of HSR, it is also important to identify a corridor that will ensure a sustainable demand. HSR construction itself is easy, but it is crucial to balance life cycle cost with the revenue and to make sure there is enough demand to support stable operation. This is our advice to those thinking of building a HSR from now on.

Q: The following questions are for Sundeep Kumar on India's high-speed rail project:

① What is the fallback system for train tracking?

② What is the plan for ensuring track health condition?

③ What technology will be used for fixing rails to a track slab?

A: Sandeep Kumar・Director, NHSRCL

The rail condition will automatically be monitored by AFTC (Audio Frequency Track Circuit), which will link to the base and the driver by telecommunications. Fallback is guaranteed by this telecommunication technology. Since rail track technology is out of my field, I will reply to the last question later.

Q: HSR project have missed political support within the US in the past. What changes or impact do you think COVID-19 and the upcoming presidential elections will have on US federal government political support?

A: Rick Harnish・Director, High Speed Rail Alliance

There are short-term concerns where US will be more inclined to use automobiles due to the COVID-19 pandemic. However, even under current situation, we have noticed strong support for railway in some regions, for example between Minneapolis and Chicago. Our challenge is to create good messaging in order to connect and motivate public and government officials. The US is facing a different climate from what we have experienced before, and I believe that railways will be an important element for the region's economic challenges in the future.

Q: As mentioned in Rick Harnish's presentation, how is Hyper Loop perceived in each country and how do you think about the technology?

A: Rick Harnish・Director, High Speed Rail Alliance

Investments made in some regions show demand for a different travel mode than what we have now, which gives me hope. However, what can be achieved with Hyper Loop will probably work better with rail, except for the speed which is still hypothetical. We should focus on what to emphasize and what can be achieved by the technology.

A: John Chen・Senior Advisor, Taiwan High Speed Rail Corporation

As an operator, I feel that there are difficult issues in Hyper Loops' practical application, such as how to evacuate passengers when break downs occur between stations. Hyper Loop has not been considered in Taiwan at all. We believe that Taiwan High Speed Rail have played an adequate role in connecting major cities in Taiwan.

A: Sandeep Kumar・Director, NHSRCL

There is no discussion of Hyper Loop in India.

Q: There are many proposed high-speed rail projects throughout India. As a democratic country, it is not easy to realize its policies. Do you have any recommendations for others in order to persuade the public on the benefits of HSR?

A: Sandeep Kumar・Director, NHSRCL

Including land acquisition, the project is progressing based on the consent of the public. There is opposition to the project, but we are trying to gain their understanding by showing the benefits of HSR such as time reduction in travel, contribution to environmental problems, etc. The Metro also had much opposition at the beginning, but now its network has been expanded nationwide and has earned the understanding of many people. I think the same will happen with HSR. It's hard at first, but if we could show the benefits, we expect HSR will be built not only once, but all over the country.

Q: How do you, or will you ensure the safety of high-speed rail?

A: John Chen・Senior Advisor, Taiwan High Speed Rail Corporation

No safety, no high-speed rail. We tell our employees not to always focus on "on-time operations", to always be aware of "safety". A high awareness of safety supports the safety record of Taiwan High Speed Rail. The use of a dedicated track is also an important element of safety.

A: Sandeep Kumar・Director, NHSRCL

India's HSR project has adopted the Shinkansen system which has more than 50 years of safe operation. As the speed increases, precision becomes more important. India intend to bring construction work, maintenance and education that can meet the required precision as a "system" from Japan. It is not only the technology we want to bring, but we would like to incorporate the "Shinkansen culture" from Japan.

A: Rick Harnish・Director, High Speed Rail Alliance

It is certain that there is an advantage in safety by using a dedicated line. Until now, there have been no fatal accidents occurred with HSR using a dedicated line except for the case in China. For the US, it is obvious that we need a different "safety culture" from the present, in both passenger and freight rail.