International Conference on Railway Engineering 2014
Railway – What a Journey!
Keynote Speech by Ir. Frank CHAN, JP, DEMS

Good Morning President Barry, distinguished guests, ladies & gentlemen.

A Matter of Experience

Albert Einstein once said "I love to travel but hate to arrive." For most travelers, apart from arriving at destination, it is the journey and experience that matter. Walking across the desserts, cycling across the continents and yachting across the oceans are just a few of the many exotic ways of travel. For most travelers, air transport has undoubtedly dominated the long haul market at a speed of 900km/h. However, the space inside an aircraft is limited and passengers are confined within their seat compartments in most instances. Other than the first timers, travelling by air is often considered a necessity rather than an experience.

But things changed when the Airbus A380 was launched in 2005. The super jumbo jet has built in many new features. Being a double-deck, wide-body, four-engine jet liner, it carries altogether 555 passengers. Its innovative design minimizes intrusion into your personal space even when the passenger in front reclines. Its ergonomic seat design further maximizes knee and legroom. An easily accessible handset, non-intrusive reading light and in-seat power supply are examples of the many user friendly designs. You would be amazed to find a bar on board the plane as well as the vast amount of infotainment to choose from. Just in case you need to work, there is a USB port on your personal console for accessing business software to create document, spreadsheet and presentation files at the touch of your finger tip.

While the airliners are making the move to enhance passenger experience, ocean liners are way ahead of the game. Evolving from bunkers and cabins that meet the basic needs, we now have roaming cities on the move.

The 225,282 ton Oasis of the Seas redefines passenger experience. It features duplex loft and luxury suites measuring 150 square meters. The lofts are 72m above the water line and offer spectacular views of the ocean with floor-to-ceiling windows.

In addition to a rock climbing wall, wave surfing pool, skating rink and miniature golf course, the Oasis of the Seas also has a zip line. There are also theatres, swimming pools and amusement rides. It also includes a replica of the Central Park where passengers can sit and gaze around. The area is surrounded by shops, restaurants and bars so that passengers have a complete city atmosphere. There is also a science lab in the Youth Center making the cruise an educational experience as well.

On land, the renounced Orient Express that ran between Paris and Istanbul was a legend in luxury train travel. Nowadays, it becomes synonymous with intrigue and luxury travel. Passengers travelling on board are overwhelmed by the ever-changing panorama of majestic cities and scenic countryside. Fine dining on the move, served with sparkling silverware and glassware is certainly an experience. When the night falls, the smooth and comforting swing is perhaps the best lullaby in motion.

The Train of Change

Airliner, cruise liner and train are generically different transport modes. They are different in many aspects but common in their pursuit to enhance customer experience. They are unique on their own with little competition in most instances. But with the advent of high speed train and under-sea tunnel crossing, competition has never been so fierce.

Take for example the traffic between Paris and London. The growth of air traffic between the two cities was approximately 7% per year between 1986 and 1994. In 1997, three years after the launch of Eurostar, air traffic dropped by 30% from 4 million passengers to 2.8 million. It dropped further to 2.2 million in 2007. In contrast, Eurostar traffic grew from 6 million

passengers in 1997 to over 8 million in 2007.

Today, railway operators must embrace the challenge to provide the best customer experience. Customer experience begins with the purchase of ticket. Instead of queuing in person, on-line ticketing and seat reservation on the Internet are now commonplace. Passengers can plan their journey and reserve tickets well ahead of their travel. Once on-board the train, the journey begins with a silky start. Thanks to the traction control technology that limits jerk movement to a level that is not noticeable for many. Riding on train nowadays is much more comfortable and smooth than decades ago.

With regenerative braking and other green technologies, trains are now more energy efficient and eco-friendly. Compared with the latest airliner and cruise liner, electric train consumes the least energy per passenger-km, and thus generating the least carbon dioxide emission in comparison with air and sea travel. As a matter of fact, taking Eurostar from London to Paris instead of flying effectively reduces CO2 emission per passenger by 90%.

In terms of punctuality, trains perform better as well. For metro systems, the percentage of train on time can be as high as 99.9%. For long haul services, the Shinkansen's average delay from schedule per train was less than a minute. Similarly, France's TGV is only delayed for about five minutes for every one million kilometers travelled.

Nowadays, most people choose to remain connected with others. Naturally, passengers expect a fast and reliable network connection throughout the journey. Many railway networks are now covered by 3G, 4G or even in-train Wi-Fi network. Connectivity is no longer a concern and passengers can freely communicate or surf the Internet. VIA Rail in Canada has made use of the in-train Wi-Fi network to podcast TV shows, documentaries, animations and regular daily news. It would not be too far from now that passengers could order their meals and drinks, or request other services during the train journey via mobile apps.

The High Speed Impacts

Many countries and economies have been riding on high speed rail since 1960s. France and Japan are famous for their fast, efficient bullet trains. The Japanese Shinkansen bullet train was among the first of its kind that was opened for public use in 1964. As of today, Japan's bullet trains run through virtually every populated area of the country. In 2000, Shinkansen had reached its five-billionth passenger mark. The French TGV is another success story. It carried its one-billionth passenger in 2003. The TGV has largely replaced air travel between connected cities due to the increasing speed, streamlined security check, simple boarding formalities and the convenient location of stations in the heart of cities. The high speed rail system is now spreading far beyond the French borders into neighboring countries.

It is interesting to note the social effects brought about by high speed rail. If we were to draw a map of France to simultaneously reflect the time and distance between cities. It would look very different from conventional maps, with high speed rail connected cities pulled closer to Paris than they really are, just like a crumpled paper wrapping with Paris at the center. As a result, Marseille is half its real distance from Paris, as are Strasbourg and Lyon. France’s TGV network seems to have knitted the country together in a way that air travel never did. High speed rail has indeed changed the psychological distance between places.

Emerging evidence reveals that high-speed rail do create jobs and population growth in cities with stations along the route, and these cities fare better than those without stations. It takes a combination of station location, links to other transport systems, and supportive land-use and zoning policies to make high speed rail a springboard for economic growth and development.

The economic and urban development impacts of high-speed rail can be significant. Research result indicates that high-speed rail does bring economic benefits to the communities they serve. For the high speed rail that runs at 300 km/h between Cologne and Frankfurt, towns connected to the line are noted to have achieved a GDP rise by at least 2.7% as compared to neighbouring cities not on the route.

The findings, from the London School of Economics and Political Science and the University of Hamburg, demonstrate that high-speed rail brings clear economic gains along its route. It is clear that the line itself brought significant and lasting benefits in access to market, growth, employment and individual prosperity. One of the key findings is a positive market access elasticity, which means that improvements in accessibility to other towns, cities and regions, will be reflected in economic growth.

The development of high speed rail in Taiwan is yet another example. Taiwan High Speed Rail has been operating since 2007. This 300km/h high speed train serves 90% of Taiwan's population. The average weekday patronage has increased to 130,000 people. The high speed rail has pulled Taipei in the north and Zuoying in the south together by a 96-minute journey. People in Taiwan now make use of the high speed rail for daily return from anywhere on the Island. The flow of passengers and goods has stimulated economic growth in Taiwan. The tourism industry, especially the southern region, has benefited. Apart from being a fast, reliable and convenient way of transport, it also brings people together and closer, compressing Taiwan into an island of "one-day living circle".

The story of high speed rail would not be complete without mentioning China. With an average speed of 200 km/h or higher, China has the world's longest high speed rail network with over 11,000 km of routes in service as of December 2013. Since high-speed rail service in China was introduced in 2007, daily ridership has increased five folds, from less than a quarter million to 1.45 million in 2013, making the Chinese high-speed rail network the most heavily used in the world.

Of the four high speed rail corridors running north south, eleven out of the fifteen sections have already opened. For the other four corridors running east west, eleven out of the eighteen sections are now in service. With the completion of the entire high speed rail national grid by 2020, cities with half a million population or more will mostly be connected. For China, high speed rail is not just a train. Its value is way above transportation. It is a powerhouse for economic prosperity, regional connectivity, global diplomacy and even military strategy.

Being part of China's high speed rail national grid, the Guangzhou-Shenxhen-Hongkong Express Rail Link will bring us from West Kowloon to Shenzhen in 23 minutes and Guangzhou in 48 minutes. In the near future, Guangzhou and Hong Kong will be just a train ride apart. Going to West Kowloon for a show or dinner by Express Rail becomes a matter of choice and experience. In terms of time and convenience, it makes no difference for people from Guangzhou and locals living in the New Territories in Hong Kong. The success story of high speed rail elsewhere will soon be replicated in Hong Kong. By then, the Beijing-Hongkong route will become the world's longest high speed rail line.

What a Journey

In summary, high speed rail has redefined the relationship between time and space. It has shortened the physical distance between cities. It brings people closer in reality. It widens our living horizon and brings fresh experience that is otherwise out of reach. High speed rail is also a catalyst for economic growth and regional development along its route. At a time when climate change is high on the global agenda, the greener and faster trains have a distinct advantage over other transport modes. Given time, it will shapes the way people live and travel, and opens up a world of opportunity for us to explore and experience. So, buckle up and enjoy your journey.

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