

# The Comparative Analysis of High-speed Rail in the International Market Between China and Japan

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**Abstract:** At present, the scale of high speed railway world market expands gradually. After recent years of rapid development, Chinese high-speed rail already have mature conditions and advantages and towards to the world, and compete with the Japanese high-speed rail in the international market. Based on the competition model, from four aspects (the high-speed future goals, the current strategic, potential ability, and self-assuming) do the comparison and analysis, thus put forward the advice for our country to participate in the international high competition market.

**Keywords:** High-speed rail; International market; Competition

## 1. Introduction

In 2004, China started the high-speed rail plan. On August 1st, 2008, the first high-speed rail operated. After recent years of development, Chinese high-speed rail becomes the fastest growing high-speed rail, the most completed technology system, the fastest speed high-speed rail, the strongest and longest running mileage high-speed rail in the world. Chinese high-speed rail has mature conditions and advantages, and in 2010 began to implement the going-out strategy. But in the process, Chinese high-speed rail met many challenges, such as technical barriers, funding needs, competitors, and the biggest challenge is from the competitor. The greatest competitor is Japanese high-speed rail. Especially in the last two years, the competition between Chinese high-speed rail and Japanese high-speed rail is particularly fierce in the international market. They are confronted for many times. If Chinese high-speed rail wants to successfully implement the going-out strategy and strives for a bigger share in the international high-speed rail market, the comparative study of competition strategy between Chinese high-speed rail and Japanese high-speed rail in the international market has the very vital significance. According to Michael Porter's competition analysis model, competitors' actions and reactions show in four aspects. There are future goals, the current strategic, potential ability, and self-assuming, as shown in the Figure 1. In this paper, according to the competition model, analyzing the strategy of high-speed rail between China and Japan in the international market, there are double meaning.

On the one hand, learning the successful experience of Japanese high-speed rail, help China to make the useful

strategy for high-speed rail towards to the world. On the other hand, making Chinese high-speed rail do enemy and know yourself, then get the success in the international market.

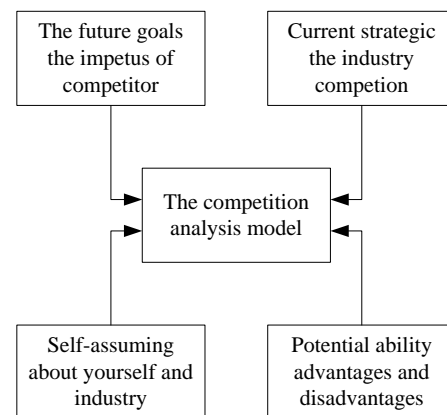


Figure 1. The competition model

## 2. The Comparison of Future Target

According to the competition model, the investigation of the target is the primary factor in the competitor analysis. Both Chinese and Japanese high-speed rail future objectives are mainly to export high-speed rail equipment. The relevant data shows that the international high-speed infrastructure market value is about 3 trillion yuan, and the high-speed rail equipment market value will reach 600 billion yuan. Faced with such a great value market, Chinese high-speed rail and Japanese high-speed rail are racing to export the country's high-speed rail equipment to get the economic value. This is the primary goal of

Chinese high-speed rail and Japanese high-speed rail. It is also the same goal of high-speed rail between the two countries.

The difference of future goals between the two countries is that Japanese high-speed rail wants to prevent the growing of Chinese high-speed rail in his development. The most important part of Chinese high-speed rail is to expand the market share. Both Chinese high-speed rail and Japanese high-speed rail, overseas strategy is their key step. Nowadays, in the high-speed rail market, only Chinese high-speed rail could compete with Japanese high-speed rail. If Japanese high-speed rail wants to expand their influence overseas, Japanese high-speed have to restricte the development of Chinese high-speed rail in the international market. However the aim of Chinese high-speed rail is not want to hinder other countries' high-speed rail. Chinese high-speed rail strategy has been risen as a national strategy, so the development of high-speed rail also represents a country's development. Chinese high-speed rail positively towards to the world is just want to obtain more market share, and then expand the influence of China.

Some of the future goals of Chinese high-speed rail and Japanese high-speed rail are in common. So with the developing, the competition for Chinese high-speed rail and Japanese high-speed rail will be inevitable. It could say the competition will be more fierce.

**3.The Comparison of Potential Ability**

According to the competition model, the potential ability is the base to support the goals. Japanese high-speed rail is the first one in the history of HSR, enjoying a high honor in high-speed rail world. Chinese high-speed rail, though started late, yet develops fast. In a word, high-speed train between the two countries have their own advantages.

In terms of safety, Japanese high-speed rail safety is higher. Since operating 51 years, there is no cause of death, even a derailed train collision or accident. Chinese high-speed rail safety is gradually improved, but the safety accident happened before has a negative effect on security. In terms of experience, the Japanese high-speed rail since 1964, holds an absolute advantage in the operation management experience. Chinese high-speed rail is constructed in different geological conditions, different climate environment, so Chinese high-speed rail reflected in the advantages of construction experience. And Chinese high-speed rail can be widely used in most countries. In terms of cost, Japanese high-speed rail operation cost is higher. Japanese Shinkansen cost several times of the total amount of investment to respond the disasters. The cost of Chinese high-speed rail construction and operation is low. The industrialization of Chinese high-speed rail greatly reduces the operating costs for the construction. The data shows, the foreign construction of high-

speed rail costs \$0.5 million per kilometer. But the Chinese high-speed is only \$0.33 million per kilometer. As the Table 1 shows:

**Table 1. The high-speed rail cost**

high-speed rail	Price(million / kilometer)	high-speed rail
Chinese high-speed rail	\$0.5	Chinese high-speed rail
Japanese high-speed rail	\$0.33	Japanese high-speed rail

Cost-effective is the important farmer competition. In terms of team, the emergence of Japanese aging population problem, the team of Japanese high-speed rail lack of talent mechanics. Nevertheless Chinese high-speed rail team is completed, Chinese high-speed rail construction troop strength is strong, and the cost is low. For the potential contrast of Chinese high-speed rail and Japanese high-speed rail, each has its advantages and disadvantages. The best choice of the two countries is to match each other.

**4.The Comparison of Current Strategy**

According to the competition model, the current strategy is the implementation of the goals for the future. Through comparing and analyzing the current strategy will know both Chinese high-speed rail and Japanese high-speed rail what they are doing now, and what will they do in the future.

- In terms of the overall strategy, Japanese high-speed rail makes the strategy implementation of the rail by the high quality target in the future. Chinese high-speed rail make low cost strategy and aid strategy to implement goals in the future. In terms of construction strategy, Japanese high-speed rail focus on passenger high-speed railway construction, Chinese high-speed rail focus on passenger high-speed rail. For export strategy, the strength of Japanese high-speed rail is locomotive export, while the strength of Chinese high-speed rail is the low cost contracting of overseas project.
- In terms of operation strategy, first, Japan established the "international association of high-speed railway", to promote Japanese high-speed rail technology and equipment export business.
- Second Japan set up special overseas support agencies and international association of high-speed railway transportation and urban development. They are responsible for the promotion of the overseas business negotiation.
- Otherwise Japanese prime minister, joined to promote the Japanese high-speed rail in the market. For Chinese high-speed railway, China and other countries set up a joint working group, to promote the construction of the railway. And two high-speed

manufacturing company CSR and CNR merged. This is a combination of the two companies. At the same time, the premier of the state council brings Chinese high-speed rail to overseas.

## 5. The Comparison of Self-assuming

According to the competition model, the ego hypothesis is about the analysis of the current status of the rivals. Japanese high-speed rail enjoys a great reputation in high-speed rail world, and many countries such as Britain, the United States, Brazil, Qatar would give the high-speed rail equipment orders to Japan. Japanese high-speed rail pays much attention to detail. Before the project construction, Japanese high-speed will send professional staff whose ability is very strong and good at observation research to the project construction, so that the construction of high-speed rail is more suitable for the development of the local.

Chinese high-speed rail in the high-speed rail world have some share in the market. In July ,2014 ,Chinese high-speed rail built the first overseas high-speed operation. In May 2015, Chinese high-speed rail got the order of Russia high-speed rail. With “the Belt and Road Initiatives” and the maritime silk road, Chinese high-speed rail will extend the construction to the central Asia and Europe.

## 6. Suggestions

Chinese high-speed rail strategy with the dream of Chinese rising in the world , whether Chinese high-speed rail win in the international market, it has great relationship with Chinese development. It is also the important step to regain the world economic dominance. In order to make Chinese high-speed rail in the world market more competitive, by comparing the analyses of current situation of Japanese high-speed rail, there are some suggestions for the development of Chinese high-speed rail.

### 6.1. Make full use of geographical advantages

Chinese land is 960 square kilometers, 14 neighboring land, 6 ocean neighboring countries, and most of the countries have idea to build the high-speed rail, so Chinese high-speed rail can make full use of its geographical advantages, for transactions involving neighbors. And through different ways such as high-speed rail projects to solve "packaging". It is also very attractive for the neighbors. This is the Chinese high-speed rail unique advantages, compared to Japan, while the Japanese high-speed rail strategy is just received the geographical restrictions.

### 6.2. Make good use of their aid strategies

China can provide the benefits that Japan cannot provide. For example, through the Asian infrastructure investment bank, have good financing, or provide other Asian countries such as the Association of south-east Asian nations (asean) lucrative project engineering, etc. But when mak-

ing aid, Chinese high-speed rail cannot afford operational risk. There are some things Chinese high-speed rail can do.

First, Chinese high-speed rail can take advantage of price advantage.

Second, according to the international business rules in foreign clients purchasing conditions, Chinese high-speed rail could undertake construction projects or export the emu.

Last, Chinese high-speed rail can undertake operating technical support.

But there are some things Chinese high-speed rail cannot do: one is that Chinese high-speed rail cannot participate in high-speed operation; the other is that Chinese high-speed rail can't provide large long-term loans, and Chinese high-speed rail can't take the high-speed rail operations business risks.

### 6.3. Based on “the Belt and Road Initiatives” planning to get cooperation

The Belt and Road Initiatives is a good chance. Chinese high-speed rail should make full use of the road. There are many countries that want to build high-speed rail. Along the silk road and area for strategic planning, Chinese high-speed rail can get cooperation with other enterprises in the neighbor countries, then become a economic linkage both at home and abroad. It is good for Chinese high-speed rail and other countries. What's more, this is the disadvantage of Japanese high-speed rail.

### 6.4. Pay attention to the detail

There is no doubt that Japanese high-speed rail pays much attention on details. This is Chinese high-speed rail should draw lessons from Japanese high-speed. If Chinese high-speed rail wants to win in the market competition, means to be more effective than competitors to meet the needs of target customers. So Chinese high-speed rail should pay more attention to the detail, to meet the requirements of the target country.

### 6.5. Consider the convenience of passenger

Though high-speed rail gets a sustainable and healthy development, yet high-speed rail must consider the convenience of passengers. According to the already opened high-speed data test, at present, for the average station spacing, Chinese high-speed rail is 40 km, and Japanese high-speed rail is an average of 30 km . Second, as far as possible with ordinary passenger rail station management, realize the direct operation, and combine the urban metro and rail, bus transportation. It will provide great convenient for passenger transfer. At present in our country, most new high-speed rail station is a certain distance from downtown, this greatly reduces the convenience of high-speed rail and competition ability. Because of the difference of track spacing, at the beginning of the Japa-

nese Shinkansen construction has also been set up, but later found that there is a very big difference between the practice operation and passenger travel habits, so it is very inconvenience, especially along the middle of the station. With station management, traffic increased significantly. Energy consumption and emissions will become the primary factor restricting the development of high-speed rail in the future. Although the high speed railway is thought to have a significantly lower carbon effect, but constantly reducing the energy consumption and emission should still be the pursuit of goals for high-speed rail in the future.

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