



Key Laboratory for Big Data Application Technologies of Comprehensive Transportation, Beijing Jiaotong University, Ministry of Transport, PRC



China-Europe freight trains with the Belt and Road Initiative—Envision of an Interconnected Eurasia



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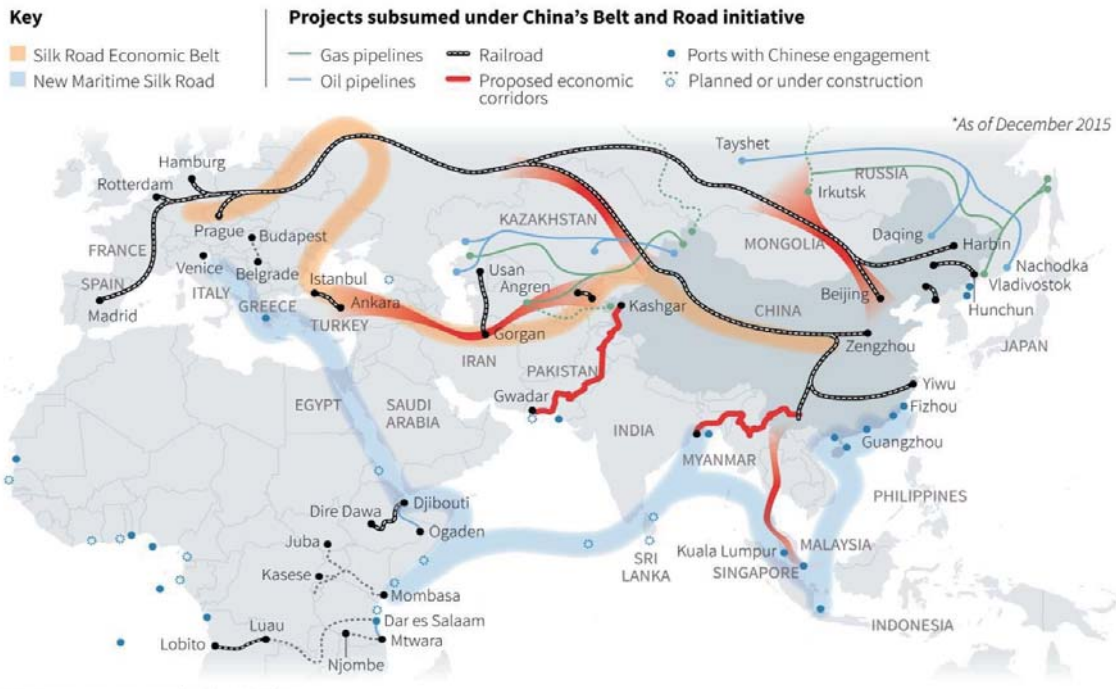
Outlines



- The Belt and Road Initiative
- China-Europe Freight Trains
 - Main Corridors and Routes
 - Main Characteristics
 - Pricing Rules and Costs
 - Freight Management
 - Development Plan (2016-2020)
- Sichuan International Freight Train Program
 - Current Developments
 - Future Challenges
- Conclusions

Reviving the Silk Road

Announced by Chinese President Xi Jinping in 2013, the Silk Road initiative, also known as China's Belt and Road initiative, aims to invest in infrastructure projects including railways and power grids in central, west and southern Asia, as well as Africa and Europe.



The Belt and Road Initiative

Chinese Export Trade Flows



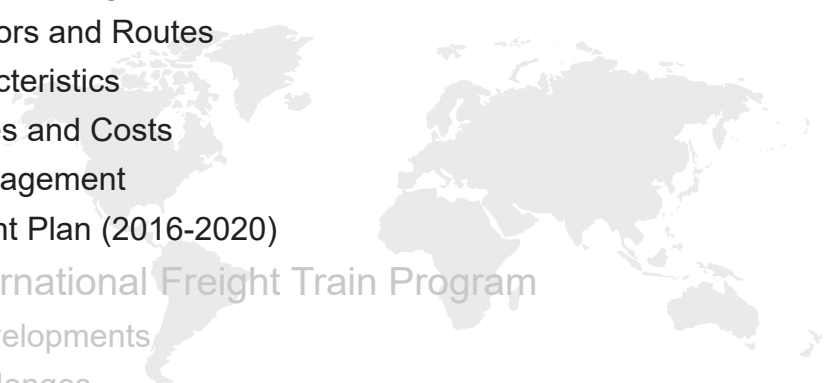
- 4.4 billion people
- 65 countries
- Annual trade could climb to \$2.5 trillion USD within a decade



Outlines



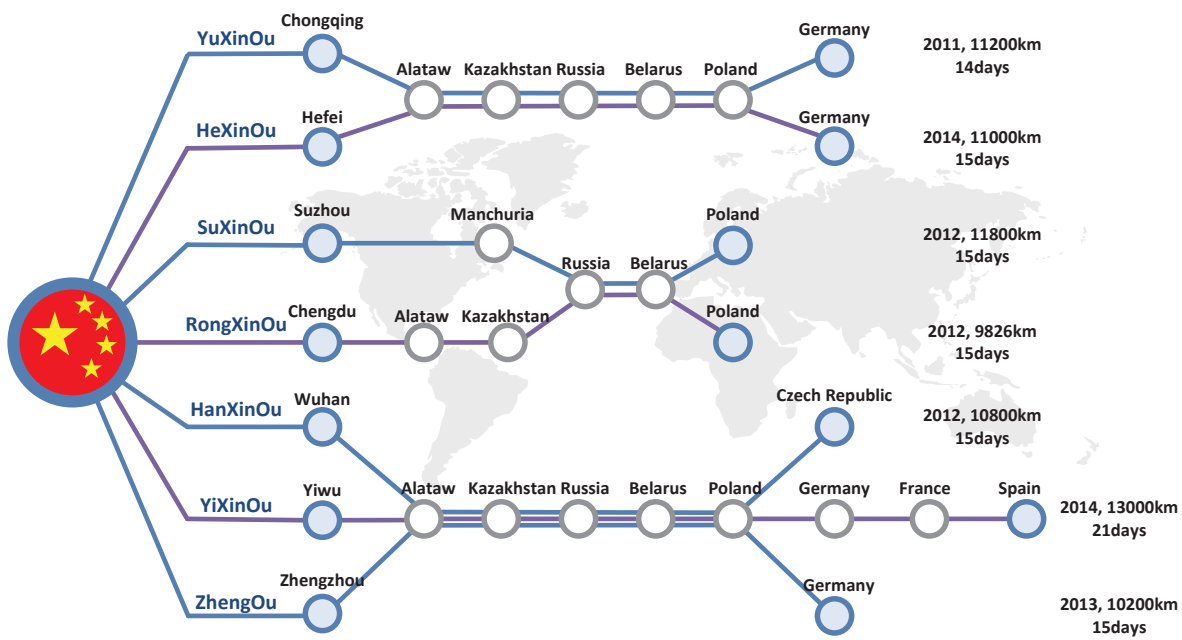
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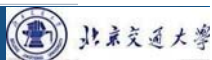
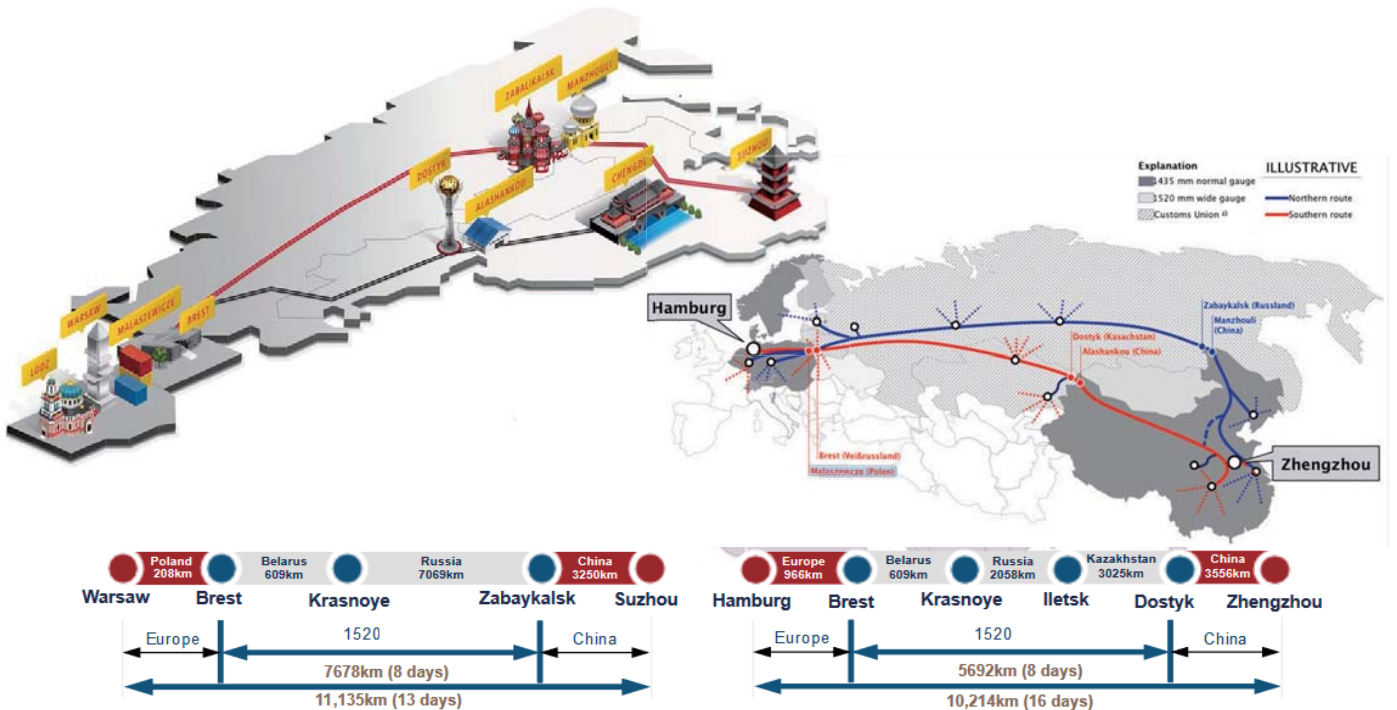
Main Corridors



Seven Railway Routes



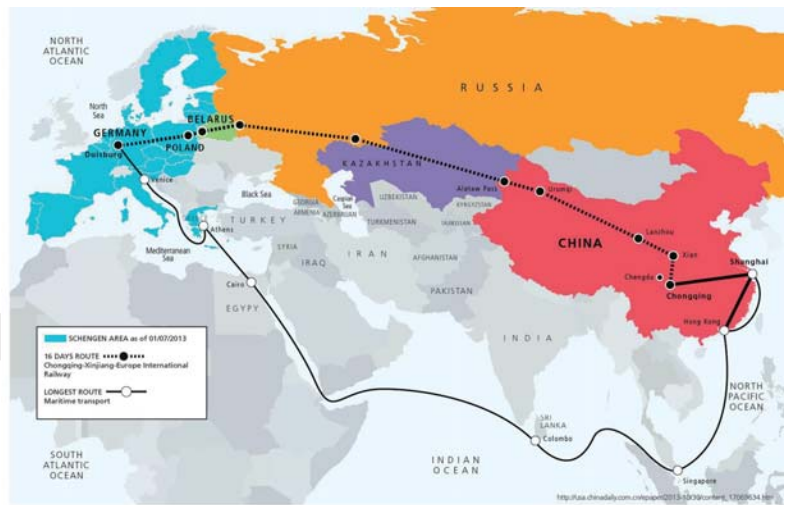
Comparison of Two Routes



Chongqing—Germany (Duisburg)



- YuXinOu (渝新欧): Chongqing-Xinjiang-Kazakhstan-Russia-Belarus-Poland-Germany, **32 railway lines**
- 3/19/2011, 11200 km
- 14 days compared with 20 days by sea
- 1 or 2 trains per day, 700 trains in 2017 from Chongqing
- Over **5000 trains** till Oct 2017
- Go through **28 cities** in China and arrive **22 cities** in **12 countries** of Europe
- **145794 TEU** in 2016



- 0.7% of containers shipping by sea
- 1.2 times of cargos shipping by air
- is 32.8% of total international containers shipping by railway.

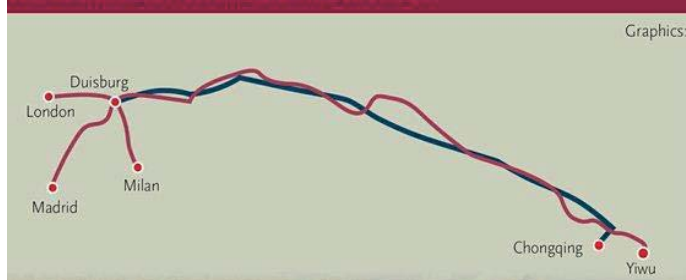
Yiwu—Spain (Madrid)



- YiXinOu (义新欧): Yiwu-Alataw-Kazakhstan-Russia-Belarus-Poland-Germany-France-Spain
- 2014
- 13052km
- 21 days
- 94 trains till Oct 2016



The routes of Yuxin'ou and Yixin'ou



- Five key factors
- The longest route
- Pass eight countries
- Go through six provinces
- Three times of track changing
- The first county-level city

Main Terminals in China



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“12235(6)N” Characteristics



One agent

The third party or China Railway International Multimodal Transport Co. Ltd



Two international transport organizations involved

International Union of Railways (UIC), 120 countries, headquarters in Paris; Organization for Cooperation of Railways (OSShD), 28 countries, headquarters in Warsaw

Two containers transfers

Differences in track gauge (Dostyk station 1435mm/1520mm)



three custom zones

China, Eurasian Customs Union (EACU), and European Union Customs Union (EUCU)

Goes through five counties

China, Russia, Republic of Belarus, Poland, Germany. West line with Kazakhstan, Central line with Mongolia



N Shipping companies

Freight management



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Main Characteristics



- Accelerated growth
- From inland to coast, from Germany to Spain
- More and more goods categories
- From independent to unified
- Unbalanced headhaul and backhaul



Train volume statistics



Year	Train Volume			Ratio (China/Europe%)
	Total	China-Europe	Europe-China	
2011	17	17	0	
2012	42	42	0	
2013	80	80	0	
2014	308	280	28	10
2015	815	550	265	48.2
2016	2191	1599	592	37.01
合计	3453	2568	885	34.47

Rapid Expansion: China-Europe Freight Train Service

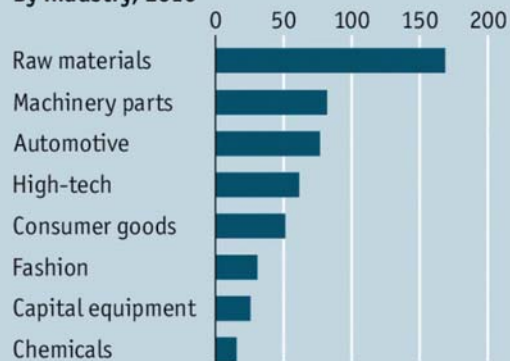


On a roll

China-Europe rail volumes, '000 tonnes

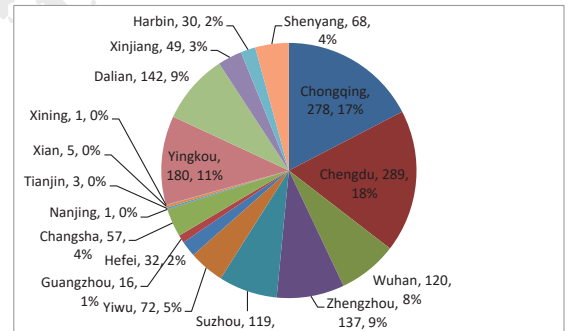
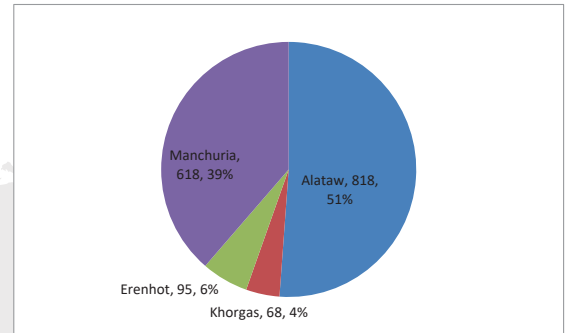
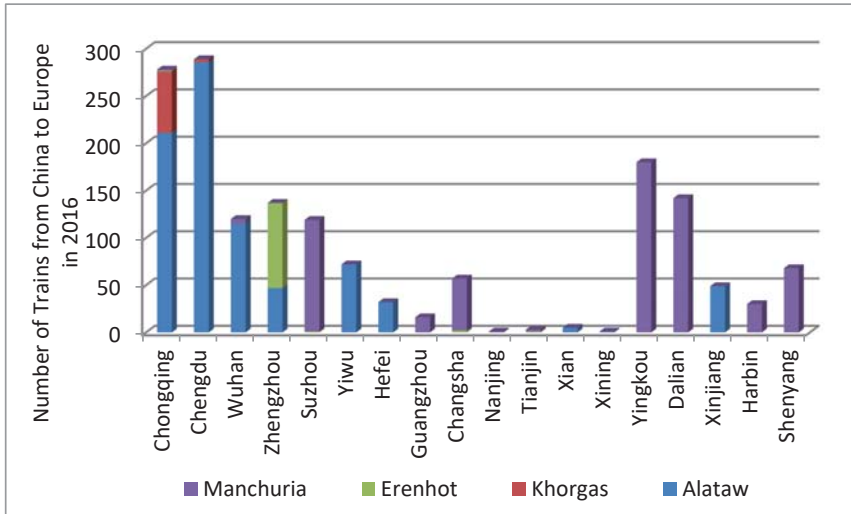


By industry, 2016

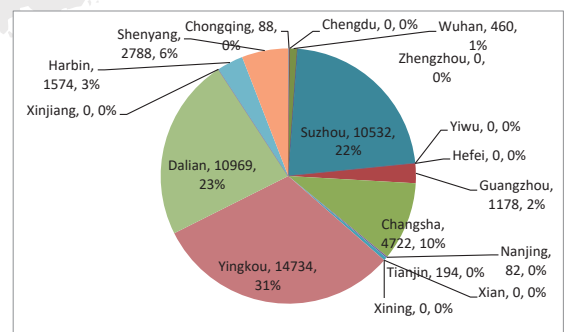
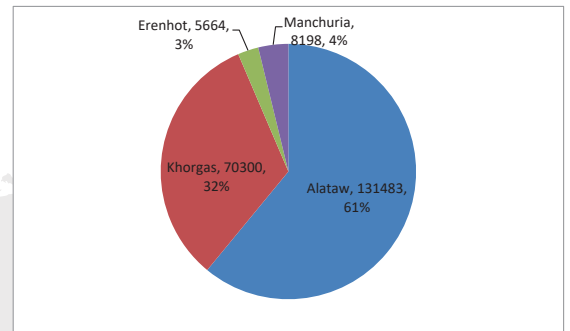
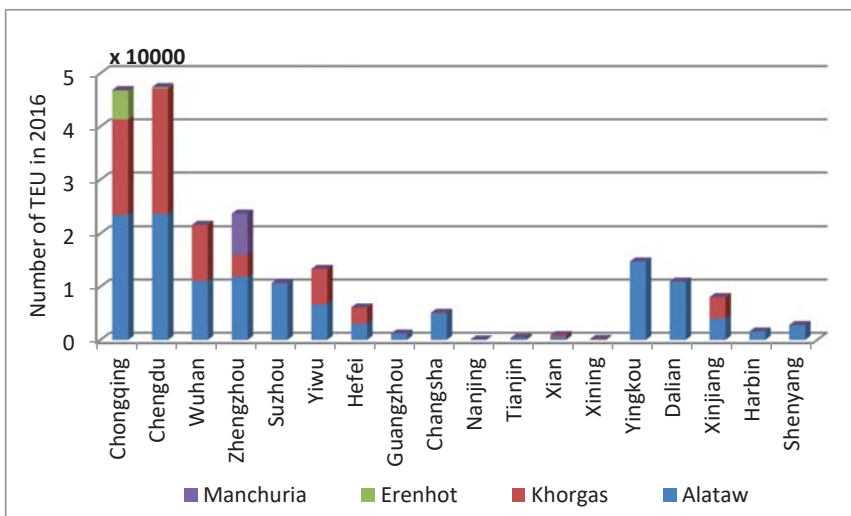


Sources: Seabury Group; Accenture

Competition between the Major Cities



Competition between the Major Cities



Pricing Rules and Costs



- Same as the sea cargo or a little bit higher
- Certain subsidies
- China-Europe (Poland, Germany) \$0.50-0.6 per km for a 40 ft container in 1520 mm sections, \$0.65-1 in Europe, \$0.6 in China, average \$0.65-0.7; Europe-China, average \$0.55
- China-Moscow through Alataw, \$0.6-0.65 per km for non-domestic sections, China-Moscow through Manchuria, \$0.45-0.55 per km for non-domestic sections
- For non-domestic sections, through Alataw to Poland or Germany, estimated \$3800-4300; through Manchuria would be lower

Freight Management



China-Europe Freight Train Goods



Western Europe

Computer, electronics accessories & supplies, home appliances, Automobiles & parts, tires. Transfer mainly



Eastern Europe

Automobiles & parts, home appliances, fabrics & cloths, groceries, luggage & handbags, decorative material, building materials, furniture.



Russia

Groceries, luggage & handbags, decorative material, building materials, steel, mechanical equipment, PVC, chemicals & raw materials, tea, ketchup, coffee, furniture.



Central & Western Asia

Home appliances, Automobiles & parts, tires, fabrics & cloths, viscose fiber, groceries, luggage & handbags, decorative material, building materials, steels, mechanical equipment, PVC, chemicals and raw materials, tea, ketchup, coffee, furniture.

Freight Management



- 1 **“YuXinOu” Local service**
Six computer companies in Chongqing. According to the requirements of transport time, quality, safety, and reliability, organize direct train service to Germany.
- 2 **“YingManOu” Intermodal transport**
Take advantage of low shipping fee of ocean transport and Russia rail, develop intermodal transport between Southeastern coast, Japan, and South Korea. Organize direct train from Dalian, Yingkou to Moscow, Slovakia, Belarus, and Poland.
- 3 **“LianXinYa” Transit rail**
Take advantage of freight rate policy in transit shipment, organize the goods from Japan, South Korea, and Southeast Asia countries visa China to Central Asia and Europe.
- 4 **“ZhengOu” Logistics Hub**
Develop Central China logistics hub. Attract the goods from central China and organize the direct train to Germany.
- 5 **Xinjiang Region cooperation**
Through region cooperation, organize freight train to Central Asia or Europe.

Development Plan (2016-2020)



Developing goals

- The development of basic transit corridors will be completed
- Basic hubs will be built
- Goods gathering effects will start to show
- Operate 5000 trains per year
- Significate improvement of return train quality



Development Plan (2016-2020)



Attraction Zone of Goods

- West Corridors: transit through Lianyungang-Lanzhou, Lanzhou-Alataw
- Central Corridors: transit through Guangzhou-Beijing, Ulanqab-Erenhot
- East Corridors: transit through Shanghai-Beijing, Dalian-Harbin



Development Plan (2016-2020)



Important Hubs & Terminals

- Inland major freight hubs, two direct trains per week, can attract returning trains, gather and manage freight
- Major rail terminals, important station in transport network
- Important harbor hubs, provide sea-rail intermodal transport, more than 3 direct trains per week
- Entry port nodes, can provide custom services and cargo transfer



Outlines



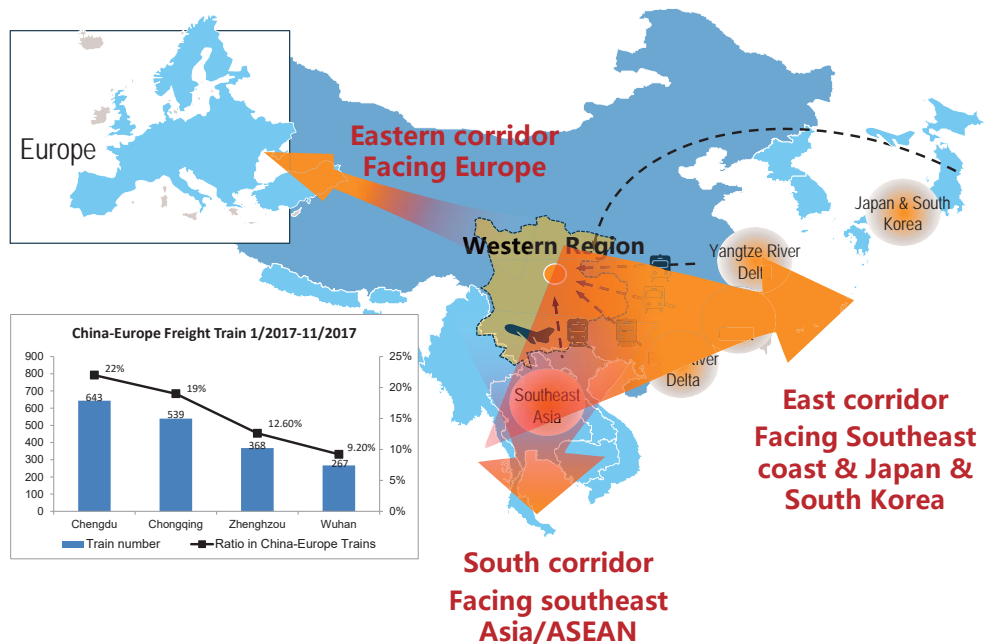
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Sichuan International Freight Train Program



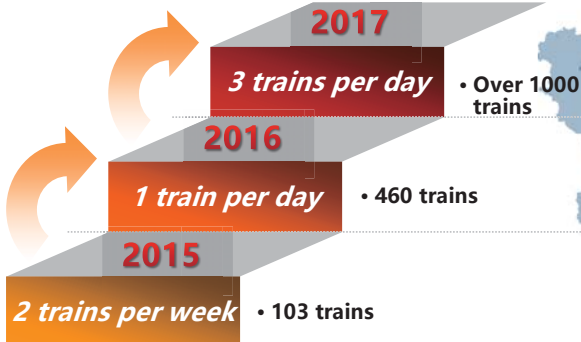
- The belt and road initiative promote new patterns and framework**
- “Depart 13 and return 10” per week in 2017**
- Average loading rate will reach 70%**
- First place (25% train volume in China)**



“RongOu+” Freight Trains



Develop interconnected freight trains and routes



1275 “RongOu+ ” freight trains connected to the 6277 trains from RongOu express trains in 1/2017-11/2017



Future Challenges



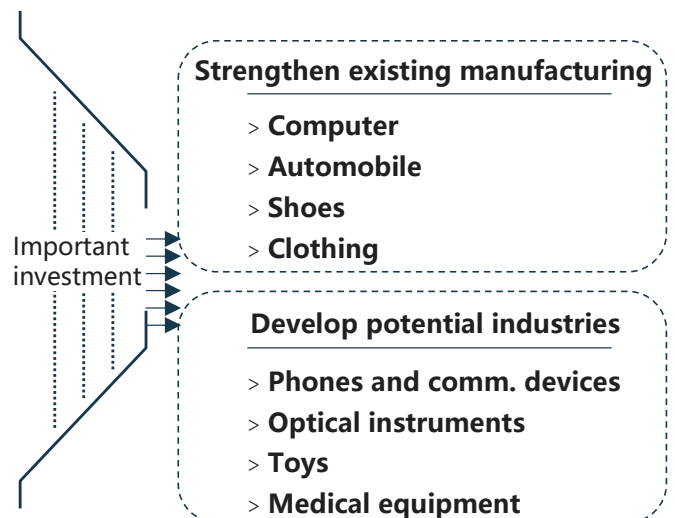
Encourage the migration of industries to Chengdu

Drive advanced manufacturing gathering around Chengdu

Develop new trade modes

Provide easy & convenient services

Develop industries and business



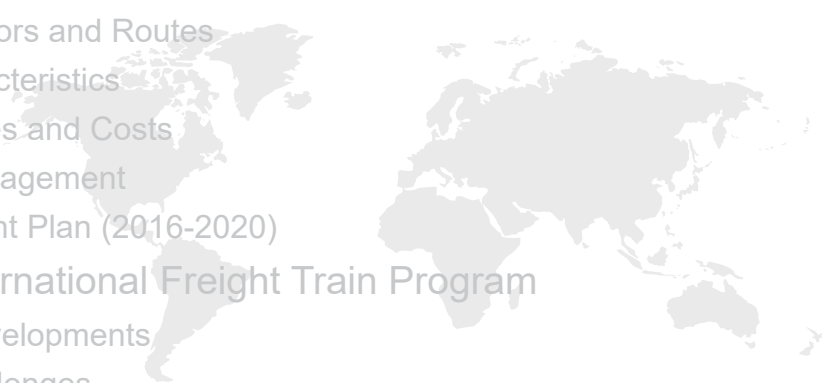
Future Challenges



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Conclusions



■ Better freight management

- Develop information and resource sharing platform
- Develop logistics hub in east, central, and west port corridors managing goods

■ Establish better subsidies policies, increase competitiveness

■ Better balance between quality and quantity

■ Better cooperation mechanism

- Simplify transfer procedures
- Information exchange & paperless technology
- Improving transport regulation, standards and laws

■ Better organization and coordination at border stations

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Thank you!!
Questions and Comments!!!

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