



丝绸之路沿线运输与物流标准

Transportation And Logistics Standards Along The Silk Road



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Discussion
on

- 1 Xi 'an port joins hands with "The Belt And Road"
- 2. Logistics permeates the "three bodies" and "three bodies"
- Transportation runs through six major economic corridors
- Trade convection between China and One Belt And One Road
- 5. Domestic core and overseas industrial parks
- One Belt And One Road transport and logistics agreement
- 7. Suggestions on logistics industry and production capacity cooperation



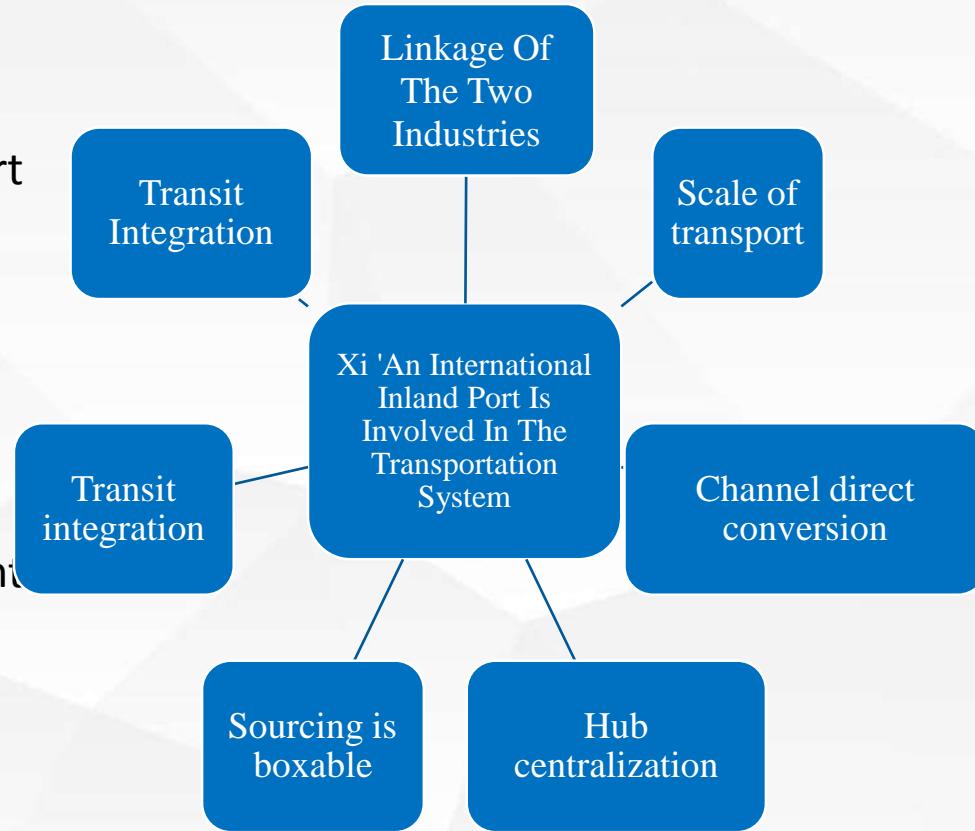
長安大學

1 Xi 'An Port Joins Hands With “the Belt” And “the Road”

- The Belt and Road (B&R) is short for "silk Road economic Belt" and "21st century maritime silk Road".
- The "one road" and "21st century maritime silk road" have a common feature for inland international transport, that is, land-sea channel, and the specific transport process is mainly rail and sea combined transport. Such as xi 'an port, rail - sea combined transport, rail - sea combined transport.
- One common feature of the "belt" and "silk road economic belt" in terms of inland participation in international transport is that land routes, railway transport and combined transport are mainly used. For example, china-europe freight train, cross-border road transport.

➤ The position and role of xi 'an port in the transport along the silk road economic belt

•The idea and way of marketization of international freight train with xi 'an port as international transit hub land port (base core). How can we build a hub of hubs, build a center of centers, give full play to the role of xi 'an port, and realize the marketization of international freight trains, the integration of international and domestic freight trains, and the marketization of international freight trains with high quality?





Specific contents of the belt and road initiative

(1) Direct Access. Xi 'An Port Should Give Full Play To The Time Turnover Index Of The Channel, Realize Direct Access To Land Transport, And Give Play To The Complementary Advantages Of Rail And Rail Combined Transport, And Give Play To The Number Of Trains From The Transit Port. Therefore, It Is Necessary To Strengthen The Transfixion Of Passageways.

(2) Hub Centralization. International Hubs Should Be Re-centralized On The Basis Of Domestic Hubs, So As To Make The Hub Become The Hub Of International Train Transit And Departure. Xi 'An Port Is The Central Hub Of The National Geographic Center And The International Hub Of The Domestic Hub System. As A Land Port Connecting The "One Belt" And "One Road" International Transit Hub, Xi 'An International Transit Hub Port Should Play Its Role As The Hub In The Center And The Hub In The Hub.

(3) containerization of goods. expand the proportion of containerized goods, increase the scope of goods through road and railway transportation, and highlight the suitability of goods for container transportation by expanding the scope of goods for container transportation, and support the specialization of logistics with economic benefits.



(4) Transfer Integration. The Theory Of Integration Field Is That The Integrated Body Should Realize Active Optimization Based On The Basic Core (International Transit Hub Port) And Connection Key (International Main Logistics Channel And Domestic Logistics Network).By Increasing Freight Train Frequency And Train Density, Reduce The Cost Of Container Kilometers.

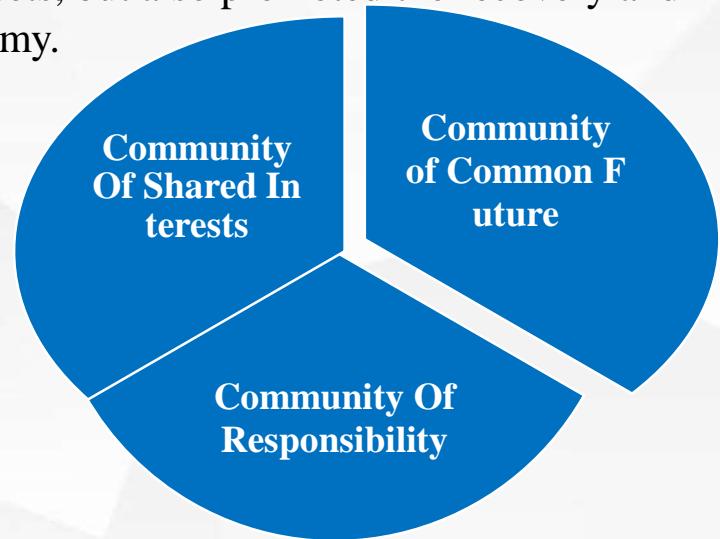
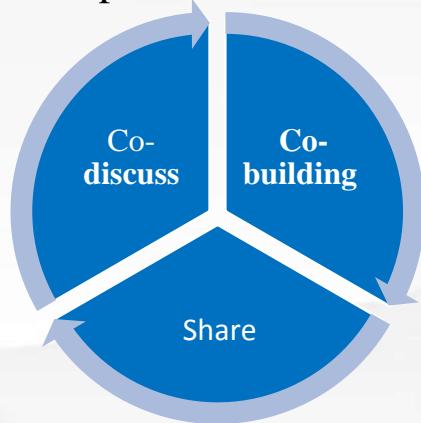
(5) The Two Industries Linkage. E-commerce Logistics Is A Manifestation Of The Extreme Linkage Between The Two Industries, Which Means Precise Docking, Coordinated Development And Shared Value-added.To Ensure That 70% Of The Supply Comes From Outside The Provinces And Regions, We Need To Continue To Promote The Linkage Of The Two Industries And Industries, So As To Develop Production Capacity Cooperation.

(6) Transportation Scale. Box Kilometers Cost Reduction, Unit Economization, Cost Reduction;it Can Form Mutual Support With One Belt And One Road Production Capacity Cooperation Park.

➤ 2. Logistics permeates the "three principle" and "three Community "

The principle of "three common principles" means to adhere to the "Belt And Road" principle of extensive consultation, joint contribution and sharing; The goal of the tripartite system is to realize a community of Shared interests, responsibilities and Shared future for mankind. Logistics is the service industry connecting the three systems.

In a word, the joint construction of "One Belt And One Road" has not only promoted the economic development of the countries along the belt and road, increased employment, provided tax revenue, improved people's livelihood and acquired high-quality assets, but also promoted the recovery and development of relevant regions and even the world economy.





“The Belt And Road 5 Link” Development Status

- (1) **Policy Communication**, China has signed 171 cooperation documents with 123 countries and 29 international organizations, including developing countries, developed countries, international organizations, and many companies and financial institutions from developed countries to jointly explore third markets with China.
- (2) **Infrastructure Connectivity**, including china-laos railway, china-thailand railway, jakarta-bandung high-speed railway, and budapest-serbia railway. By the end of February this year, the total number of china-europe railway services had reached 14,000, not including those between China and central Asia.
- (3) **Unimpeded Trade**, China's total trade in goods with One Belt And One Road countries over the past five years exceeded us \$6 trillion.
- (4) **Financing**, by the end of 2018, the outstanding loans of the China development bank and the export-import bank in the countries along the belt and road had reached us \$250 billion.
- (5) **People-to-people Connectivity**, a series of achievements have been made in scientific and technological exchanges, educational cooperation, cultural tourism, green development and foreign assistance.

➤ FIG. 1 schematic diagram of Eurasian land bridge channel





Transportation runs through six major economic corridors

The basic framework of the "six economic corridors" based on international transport has been gradually formed, including the china-mongolia-russia corridor, the new Eurasian continental bridge corridor, the china-central Asia and west Asia corridor, the china-south south corridor, the china-pakistan corridor, and the bangladesh-china-india-myanmar economic corridor.

(1) the first Eurasian land bridge corridor.(Siberian land bridge, china-mongolia-russia railway passage)

(2) the new Eurasian land bridge corridor.(new asia-europe second continental bridge) : a new land bridge connecting the Pacific Ocean to the Baltic sea, the north sea and the Mediterranean Sea.

North passage: the north passage of the continental bridge of the second asia-europe railway. The transportation route is lian



Transportation Runs Through Six Major Economic Corridors

- (3) passage from China to central and west Asia.Among them, the completion of china-kyrgyzstan railway will be of great significance to the passage from China to the other four central Asian countries.
- (4) China to central south corridor.The china-south central corridor mainly includes: china-vietnam railway corridor, china-laos railway corridor, china-thailand railway corridor and china-myanmar railway corridor.
- (5) bcim corridor.The bangladesh-china-india-myanmar economic corridor is of great significance to deepening the friendly relations and cooperation between the four countries and establishing the connectivity between east Asia and South Asia.
- (6) the china-pakistan channel.The railway line linking xinjiang and Pakistan starts in kashgar, xinjiang, China, and ends in gwadar, a port city in southwest Pakistan.

➤ Top-level Design Of New Land-sea Channel In Xi 'An Port

The logistics network chain from the perspective of integration field involves the relationship between integration body, base core and connection key and new land-sea channel

Serve the new challenge of "One Belt And One Road" hub base check logistics industry transformation and upgrading

The platform integration body leads the base core planning and construction and the logistics integration body leads the international logistics chain development

The former is related to the dominant logistics infrastructure network, while the latter is related to the logistics organization chain

(1) green extension of network chain requires transformation and upgrading supported by international logistics channels and hub bases.

Logistics chain is the organizational form of the advanced development of logistics. The leading base (hub), channel and network of logistics integration operation are the basis of the transformation and upgrading of logistics industry. Integration of the leading capacity, the path of optimization is wide

(2) the logistics hub core is the carrier of integrated innovation, transformation and upgrading of the logistics industry.

The national development and reform commission and the ministry of transport have set up six types of international logistics hubs, including land port, port, airport, production service, trade service and land border port. Logistics core service and industrial linkage;

The demand field source structure of logistics industry to realize service capability. Taking xi 'an as an example, there are four types of national logistics hubs: land port, air port, production service and trade service, forming an international transit hub (land) port

➤ Top-level Design Of New Land-sea Channel In Xi 'An Port

- (3) the transfer hub port of the new land-sea channel forms a logistics network of goods collection, transfer and distribution. To promote the optimization and upgrading of the traditional manufacturing supply chain through the linkage of the two industries, and focus on the transformation of traditional trade to platform and network, so as to drive the development and expansion of related industrial clusters. So that the logistics industry has a steady demand to develop.
- (4) relying on the logistics foundation and core to develop logistics and strongly related industries for docking. The land-port hub can develop the combined transport of railway and sea. Relying on the airport hub, it can focus on the development of aviation related industries, make use of the role of national transit hub port, play the role of symmetrical balance of material flux in main trunk channels, and carry out industrial logistics layout. Improve the efficiency of express logistics.
- (6) the china-pakistan channel. The railway line linking xinjiang and Pakistan starts in kashgar, xinjiang, China, and ends in gwadar, a port city in southwest Pakistan.

➤ Trade Convection Between China And The Belt And Road

Table 2. 2013-2017 China's trade volume with "The Belt And Road" countries (Unit: \$100 million)

Import & export	2013	2014	2015	2016	2017
exports	6980	7737.4	7520.8	7134.2	7742.6
imports	7123.1	7288.9	6007.2	5561.6	6660.5

数据来源：《“一带一路”贸易合作大数据报告（2018）》：P177



Figure 2 China's ranking of total exports by region

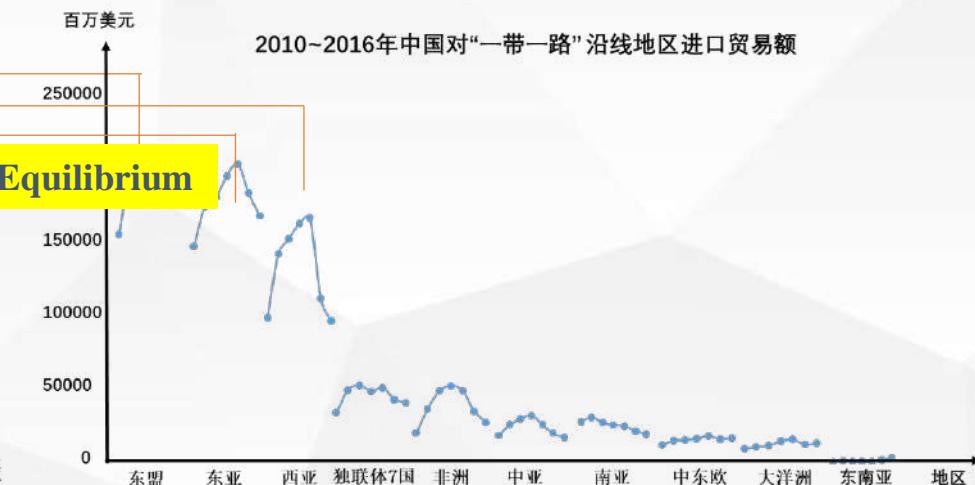


Figure 3 China ranks the total imports of each region



China's total export & import trend to each economic corridor

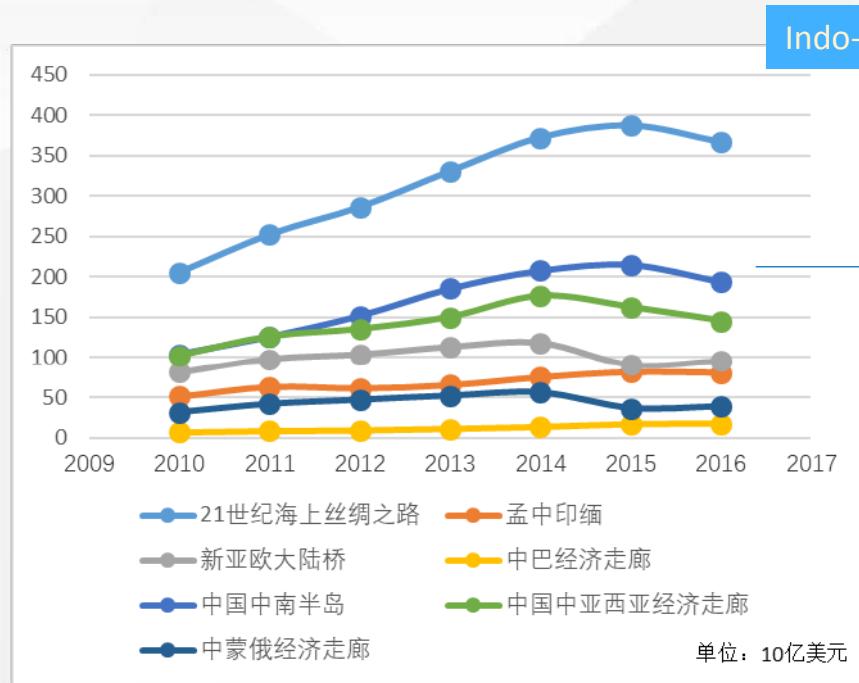


Figure 4 the change trend of China's total export trade to each economic corridor

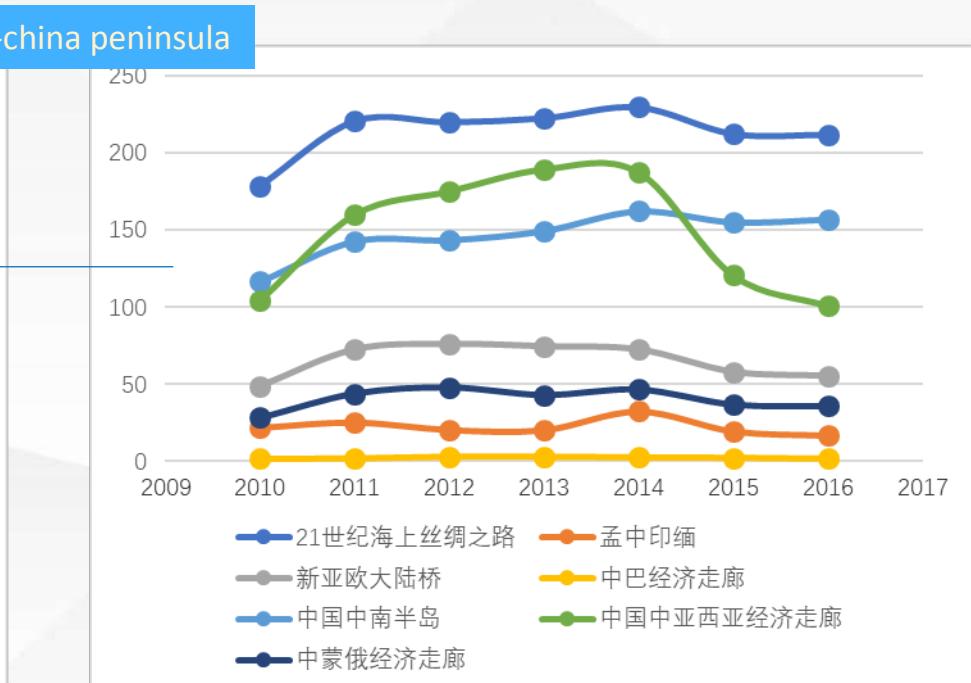


Figure 5 China's total import trend to each economic corridor



Table 1 (inland transit port) logistics network chain at home and abroad relying on the channel hub

Transshipment port	East to channel	West channel	The north channel	South channel
Xi'an	Xi'an-Qingdao Port/Tianjin Port/Rizhao port	CHINA RAILWAY Express (1235)	Xi'an-Erlianhot	Xikang Line
Chengdu	Chengdu-Shanghai Port/Tianjin Port/Ningbo port	CHINA RAILWAY Express (1587)	Chengdu-Erlianhot	Chengdu-Qinzhou-Singapore
Chongqing	Yangtze River-Sea Intermodal Transport	CHINA RAILWAY Express (1442)	Chongqing-Manzhouli	Chongqing, Guizhou and Xinjiang
Zhengzhou	Zhengzhou-Qingdao Port/Tianjin Port/Rizhao port	CHINA RAILWAY Express (688)	Zhengzhou-Tashkent	Zhengzhou-ASEAN
transit ports	(Highway-sea)Railway-sea intermodal transport; Business positioning	CHINA RAILWAY Express (Container) ; store goods、transfer、Originating、Distribution Integration	Docking between Eurasian Continental Bridges	(Highway-sea)Railway-sea intermodal transport (Container、bulk cargo) ; Three Organizational Forms of Logistics
Policy Potential Energy	General Customs Policy;	Unified Customs Clearance Policy、Parallel Import Enterprises	Unified Customs Clearance Policy	Connecting the international land and sea of "one belt and one road"; Agreements of eight provinces
Field Source Construction	Bonded area 、 FTA 、 Port construction ; Common type base kernel	(Cars, meat, etc.)port、FTA、Transit Port Strategy ; Common Base Nuclei	cost efficiency	Logistics Channel and Public Core
Indicators of Concern	Land time turnover + The shipping cost	Whole Time Turnover+Comparing shipping costs	Efficiency and Cost	Land Time Turnover Index ; Maritime cost;
practical experience	Logistics integration + Platform integration ; Construction of relations between seaports and inland ports	Logistics Integration + Platform Integration + Industrial Integration; First Line and One Enterprise	Priority is given to special sources of goods	Industrial linkage integration body
			[1] CHINA RAILWAY Express(Xi'an)have the highest loading rate, freight volume and actual operation volume in China	
			[2] CHINA RAILWAY Express(Chongqing) has class 714 for departure and	



5. Domestic base -nuclear and overseas industrial parks

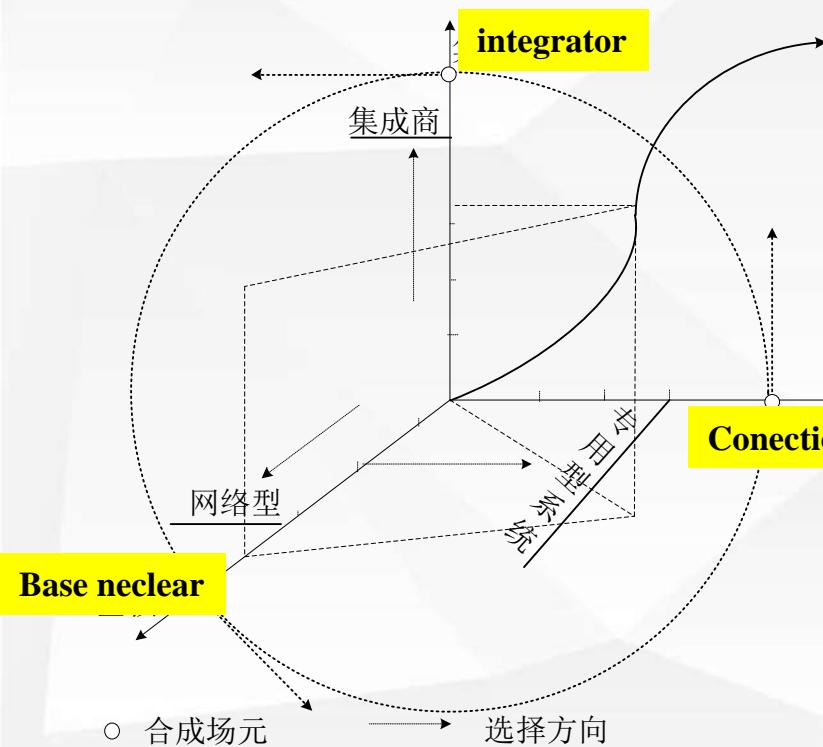


Figure 6 integrated body structure diagram of leading network chain

The integrator, base -nuclear and connection key in the integration field have formed the linkage between the two industries, production capacity cooperation and overseas park development mode. Stable cooperation relationship can bring stable benefits.

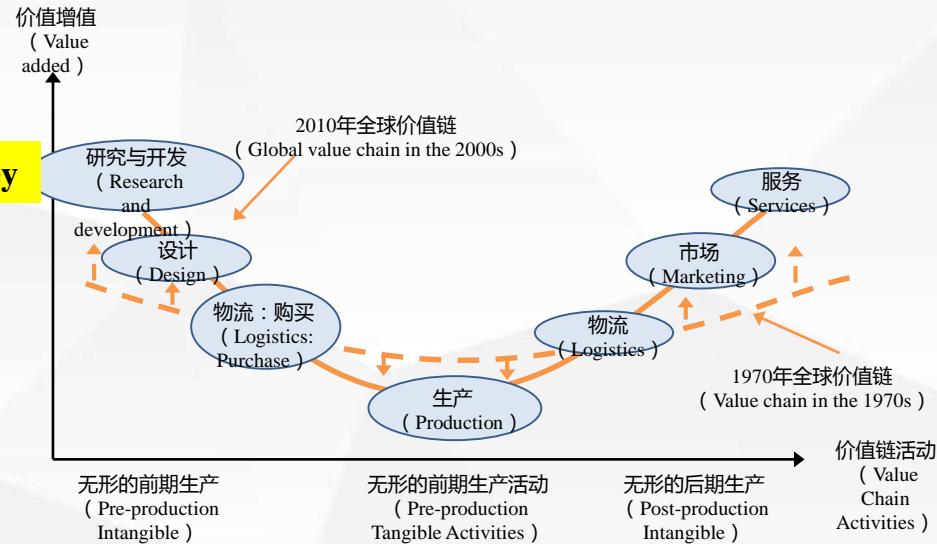


Figure 1-1 service and manufacturing GVCS are closely related



Logistics Industry Transformation And Upgrading

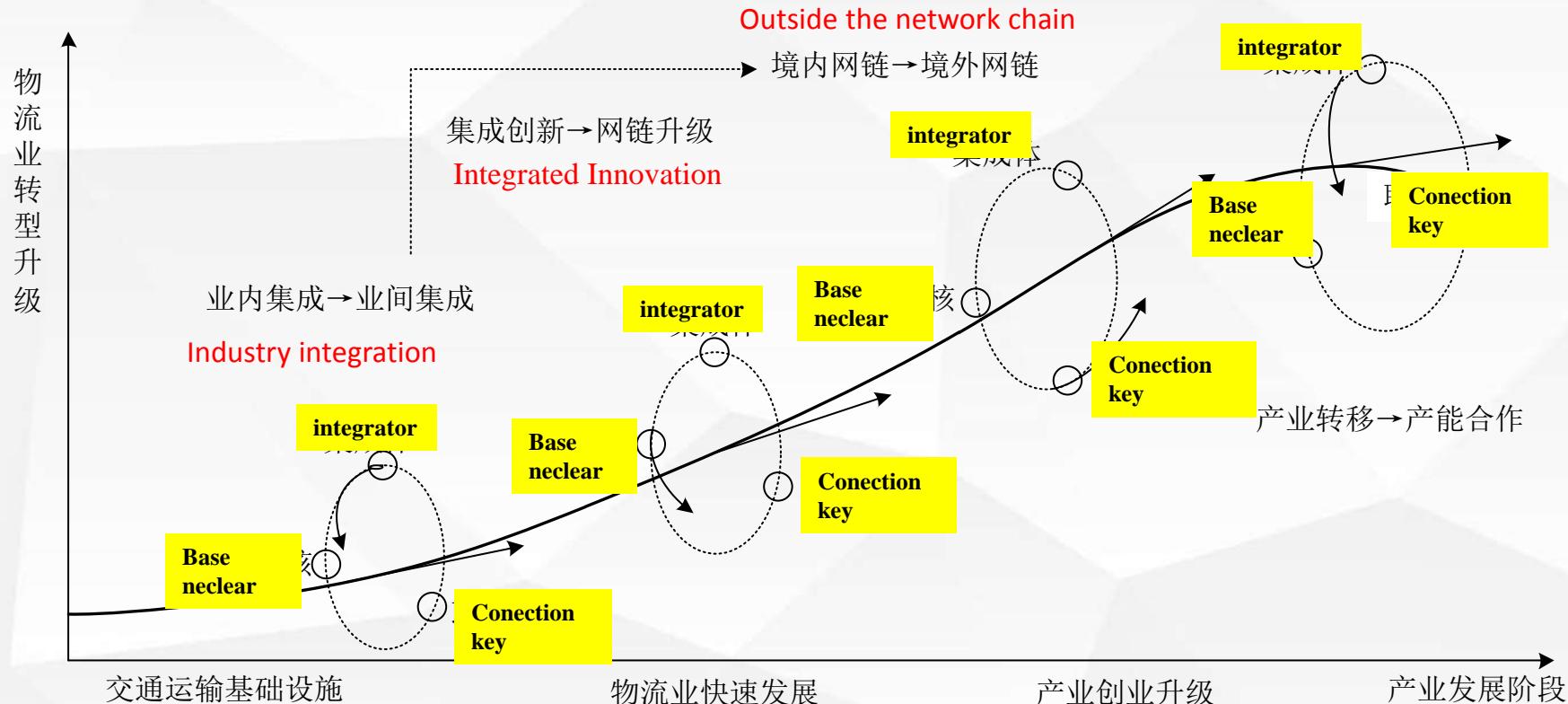
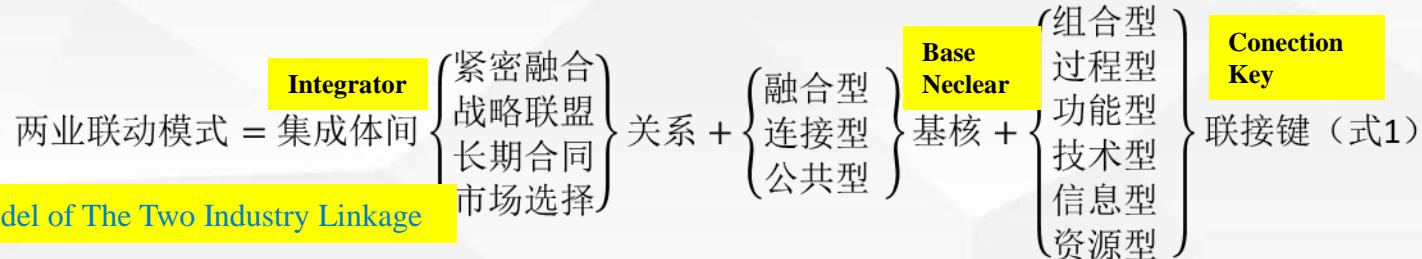


Figure 8 Support of Overseas Parks for Integrated Leading Network Chain Upgrading

➤ Development Model Of Linkage Between Industry And Industry And Capacity Cooperation



From Domestic Industrial Chain To National Value Chain, Cooperation Of Overseas Production Capacity To Enhance Value-added Ability Of Division Of Labor In Global Value Chain.

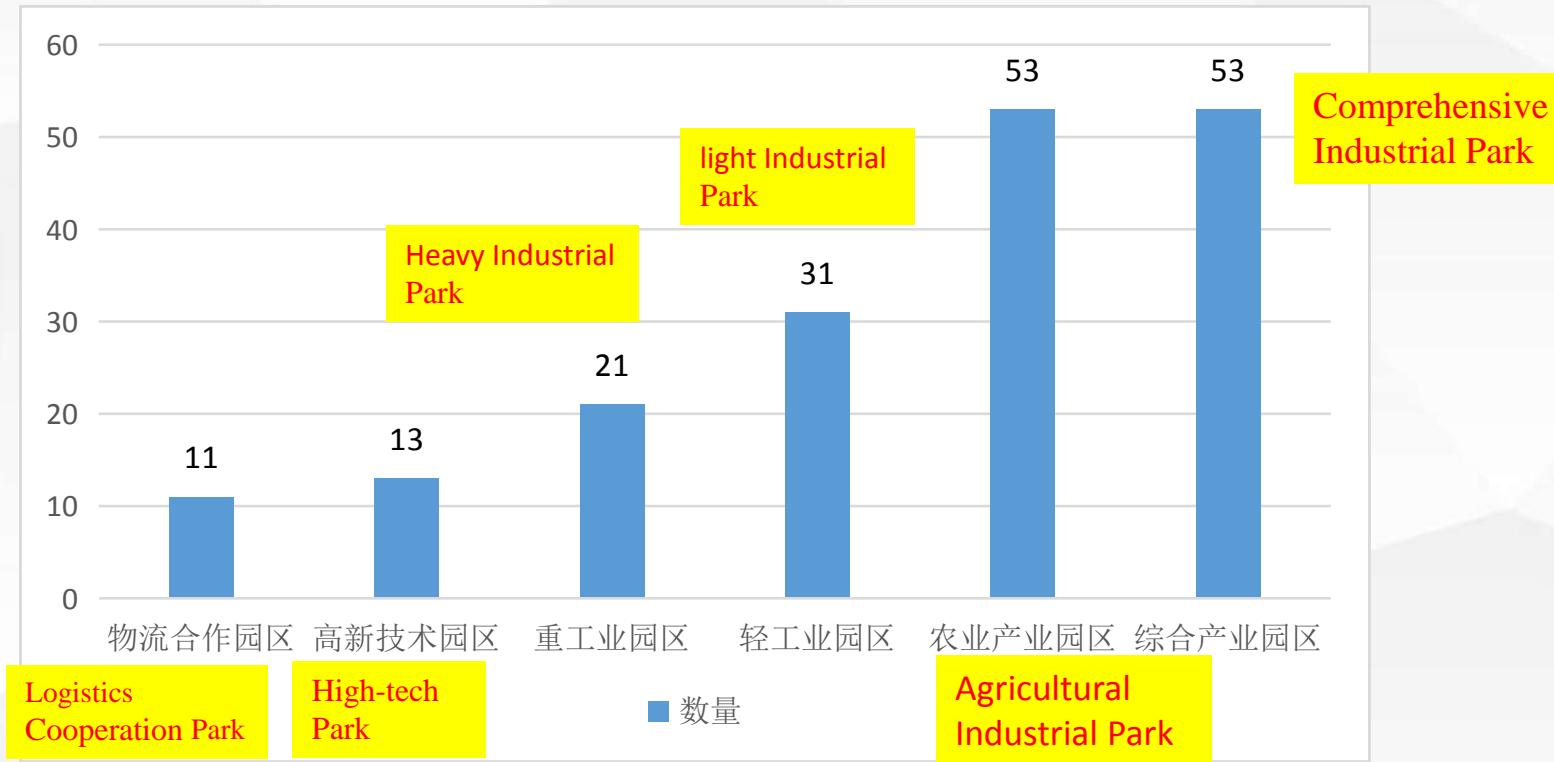


Figure 7 Distribution of Overseas Industrial Parks

Table 3 Overview of Overseas Park Construction

Classification of Parks	Quantity	Proportion	State-owned Quantity	State-owned proportion	Private Quantity	Private proportion	foreign capital	Temporary absence
Logistics Cooperation Park	11	6.04%	0	0.00%	10	90.91%	0	1
Heavy Industry Park	21	11.54%	6	28.57%	15	71.43%	0	0
Agricultural Industrial Park	53	29.12%	16	30.19%	35	66.04%	0	2
High-tech Park	13	7.14%	2	15.38%	8	61.54%	1	2
Light Industrial Park	31	17.03%	12	38.71%	18	58.06%	0	1
Comprehensive Industrial Park	53	29.12%	28	52.83%	25	47.17%	0	0
Total	182	100%	64	-	111	-	1	6

Note: The temporary absence in Table 1 refers to the temporary absence of some data.

资料来源：1992–2018年中国境外产业园区信息数据集

Xi'an's Chrysanthemum and cereals and oils have formed an overseas construction Park along the same road, which is an important practice for production capacity cooperation.

Critical Value Conditions of Transition Aging : Isolated Arrangement Time Cycle \geq Time Cycle of Arrangement by Transit Ports

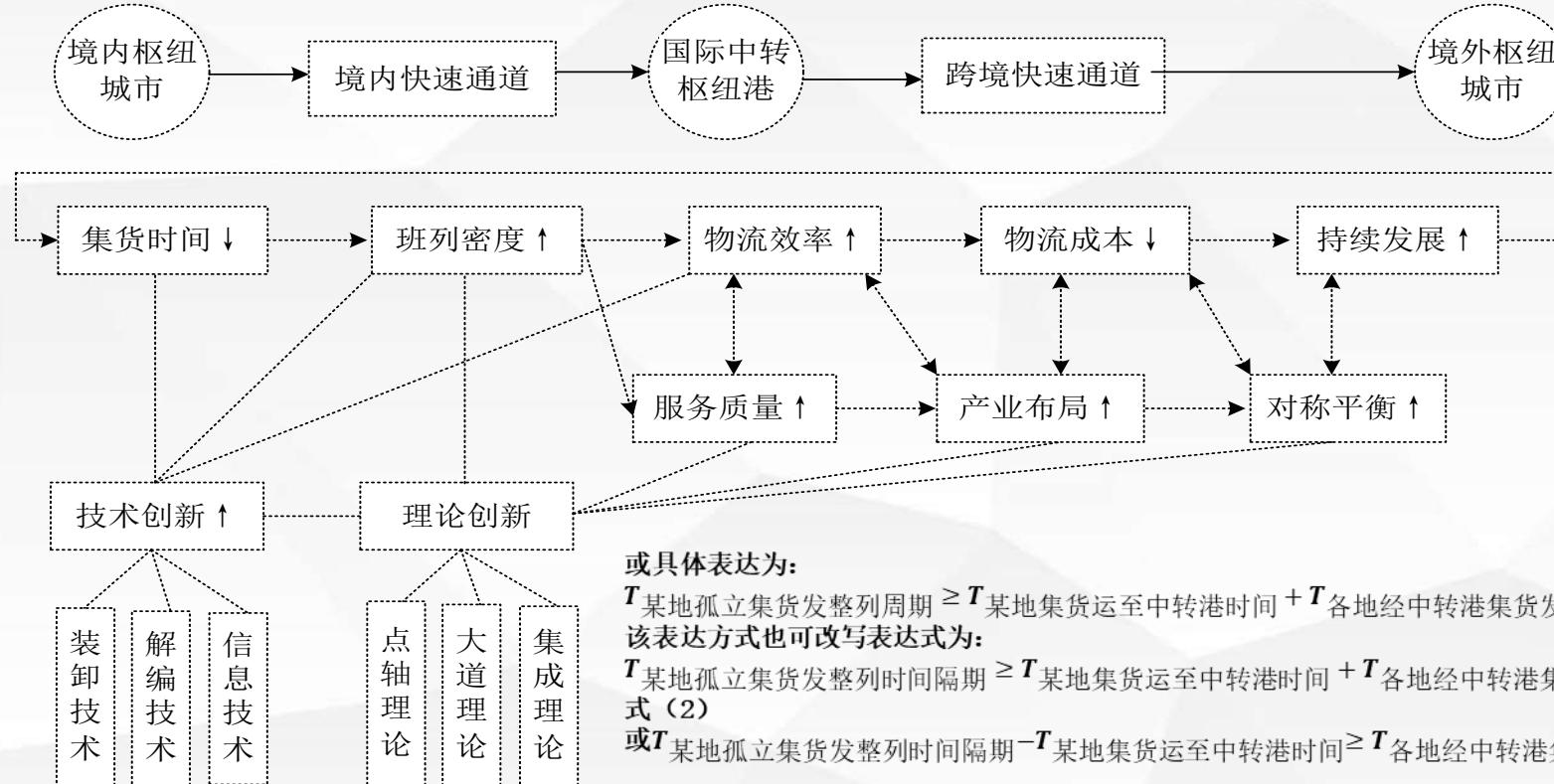


figure 9: Improving the Start-up and End-to-End Logistics Efficiency of Channels by Using International Transit Ports

6 Transport and Logistics Agreement Of “The Belt And Road”

Particular year	Country	Protocol Name	Primary coverage	Highlights
1992	China, Kazakhstan	《Sino-Kazakh Frontier Railway Agreement》	Signed to provide a basis for railway transport facilitation between the two countries	
1995	China-Kazakhstan	《Agreement on the Use of Lianyungang to Handle and Transport Transit Goods from Kazakhstan》		The earliest agreement on international intermodal transport signed between China and Central Asian countries
2004	China-Kazakhstan	《Agreement on Railway Transport Cooperation between the Ministry of Railways of China and the Ministry of Transport and Communications of Kazakhstan》	Further Deepening Railway Transport Cooperation with Kazakhstan	
1996	China, Uzbekistan	《China-Uzbekistan Railway Cooperation Agreement》	The earliest agreement between the two countries on railway transport facilitation	
	China-Vietnam	《Memorandum of Understanding on Cooperation in the Field of Agricultural Trade》、《A Common Overall Plan for the Construction of China-Vietnam Cross-border Economic Cooperation Zone》	Expanding Cross-border Fruit Trading between China and Vietnam	To adopt a separate "single window" and "two countries one inspection" customs mode for cross-border fruit trade



Form and improve China's logistics standard system to promote “the Belt And Road”

time	countries	The name of the protocol	The main content
1995	China, Kazakhstan, Kyrgyzstan and Pakistan	《Agreement on Transit Vehicle Transport between China and Kazakhstan》	
1998	China and Kyrgyzstan and Uzbekistan	《China-Kyrgyzstan-Uzbekistan Automobile Transport Agreement and Implementation Rules》、《China-Kyrgyzstan-Ukraine Agreement on the Establishment of an International Vehicle Transport License System》	
1999	China and Tajikistan	《Central Tajik Agreement on Vehicle Transport》	
2001	China and Tajikistan	《Detailed Rules for the Implementation of the China-Tajikistan Automobile Transport Agreement》	Regulating the Management of Automobile Transportation in China and Central Asian Countries
2014	China, Russia and Central Asian Countries	《Intergovernmental Agreement on Facilitation of International Road Transport among SCO Member States》	Promoting Transport Facilitation in China and Central Asia
1993 ~ 2007	China and Five Central Asian Countries Signed	Air Transport Agreement	Cross-border transport between the two sides should be facilitated
		Carrier、Loading Apparatus、Packaging standards	

7. Analysis of logistics industry and production capacity cooperation

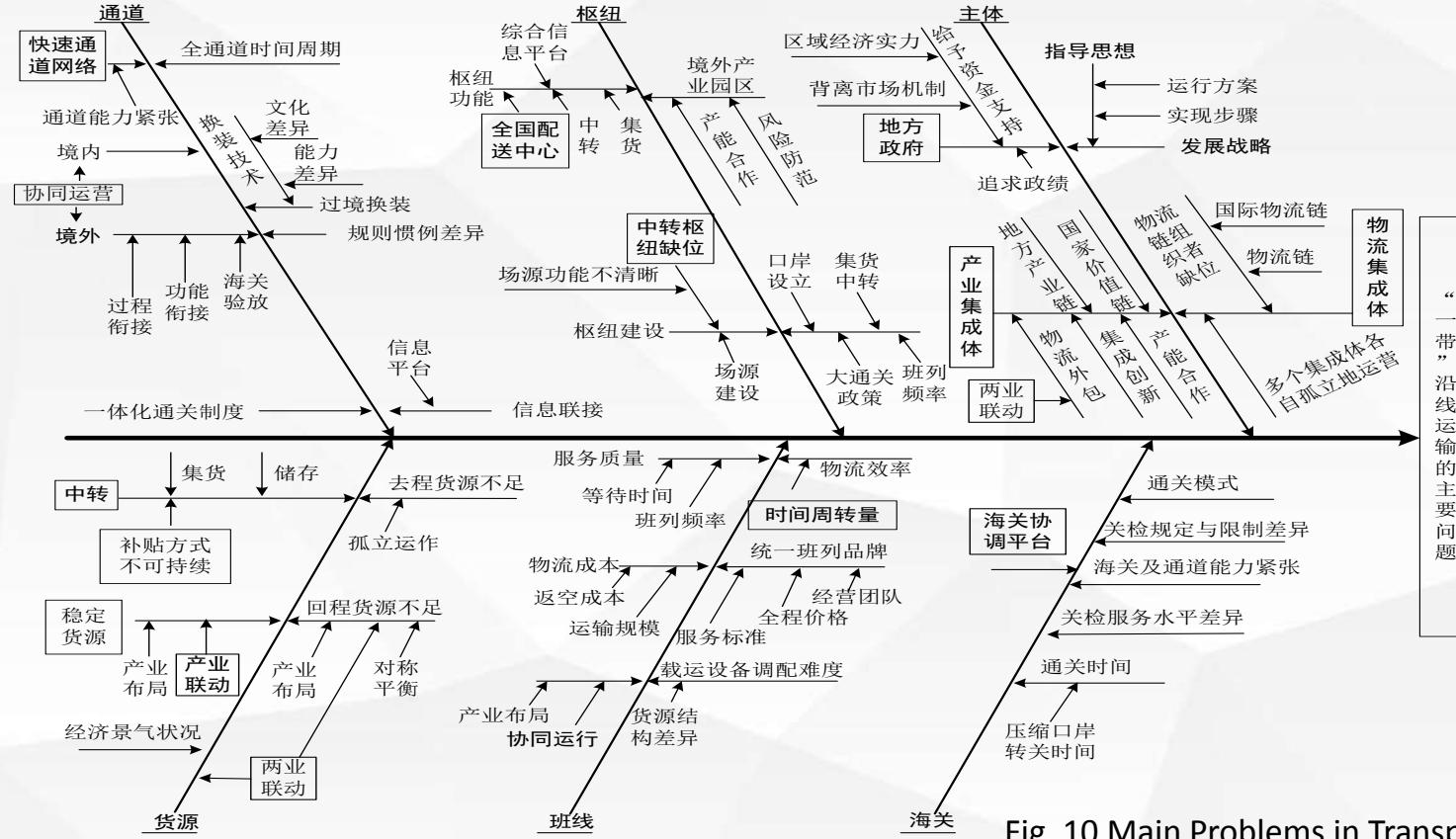


Fig. 10 Main Problems in Transportation along the Line

➤ proposed countermeasures

Macro (international) chain channel network infrastructure construction and development, international transportation, promote the development of international transport core business organization to establish the international coordination commission for the top-level design and coordination system, rational layout, form macro channel net chain, microscopic integrated support network chain logistics development countermeasure analysis, formed around a network chain development system.

- 《绿色物流指标构成与核算方法》（GB/T37099-2018）
《Green Logistics Index Composition And Accounting Method 》
- 《物流园区绩效指标体系》（GB/T 37102-2018）
《 Logistics Park Performance Indicator System》
- 《托盘单元化物流系统 托盘设计准则》（GB/T 37106-2018）
《 Pallet Design Criteria For Unitary Logistics System》

➤ (I) strengthen the construction of xi 'an port industrial integration with the support of government planning and policy potential

- (1) support leading international logistics enterprises (as integrators, leading the operation and development of network and chain), and encourage the linkage of enterprises in both industries, industrial linkage, overseas mergers and cross-border cooperation on production capacity. Support the construction of integration-led network chain development system.
- (2) the potential energy function through the government planning, policy, enterprise network chain construction development mechanism, by way of negotiation and consultation cooperation, establish a "neighbourhood" international logistics industry association, unified, from transport to perfect service, a set of international logistics services from the whole to the detail standards, gradually participation and the establishment of the leading international logistics industry rules and implementation.



(ii) strengthen the construction of xi 'an port as a national transit hub to form an integrated attraction and give full play to its international departure and destination functions

- (1) strengthen the construction of links between the base cores, realize the core land ports, ports and air ports of major countries along the "One Belt And One Road" route, and establish unified information sharing and real-time business connectivity services with China's core ports.
- (2) strengthen the organization system of land bridge transportation efficiency, continuously enhance efficiency, reduce cost, transform and upgrade, organize the freight transportation in the international channel that has been cleared, and improve the efficiency index of main channel time turnover.Such as the new Eurasian land bridge.
- (3) strengthen the construction of international transit hub land port cargo collection, transit, departure, arrival and distribution system, and promote the market-oriented and serialized operation system of international freight trains.
- (4) actively build international logistics parks and international land and bonded logistics ports, develop linkage between the two industries, industrial linkage and production capacity cooperation, concentrate freight and supply, facilitate the organization of long-distance efficient, large-scale and low-cost transport system, and build a modern international multimodal transport logistics system.
- (5) strengthen the construction of transport and logistics infrastructure along the belt and road, and promote the development mechanism of industrial linkage, industrial linkage and production capacity cooperation.



(iii) strengthen construction of connection keys: unify construction standards, charging standards, monitoring standards and information standards

- (1) gradually establish mutually beneficial and convenient customs clearance mechanism, tariff reduction mechanism and cross-border logistics service mechanism, and gradually build the areas along "One Belt And One Road" into the highland of international customs clearance and bonded policies.
- (2) strengthen uniform standards for channel construction and improve channel informatization construction. The track gauge and standard of railway channels in countries along the route should be unified as far as possible, especially the newly built railway channels, so as to reduce the frequency and cost of replacement. Overall planning and layout of railway channels along the line, improve the efficiency of international combined transport, reduce customer time and cost.
- (3) strengthen the application of big data and cloud computing technology, integrate with the informatization construction of countries along the route, realize the information integration of the whole channel, and meet the demand of real-time tracking of main channel information of international logistics.
- (4) on demand, orderly and phased completion of the missing section of the channel along the route. For countries facing difficulties such as lack of funds, funds or construction assistance can be provided at the early stage of construction, so as to promote the upgrading of railway facilities and continuous improvement of economic and trade level of countries along the route.
- (5) set up national railway coordination committees along the belt and road, and coordinate the construction of railway corridors along the belt and road. To coordinate and solve the reconstruction of capacity facilities of railway lines along the line and the construction of the missing sections; To mediate the safety, claims and other channel transport liability issues for customers, to ensure the smooth operation of each channel.



(iv) xi 'an port shall play a pivotal role and improve the efficiency of the whole field line and domestic distribution in central Europe and central Asia

Xi 'an port international transit port function should be brought into full play. The goal is to build a rapid international logistics channel for central Europe and central Asia, and promote the transformation and upgrading of international logistics.

Connectivity Of Policy, Infrastructure, Trade, Finance And People.



参考文献

- [1]董千里.集成场理论：两业联动模式及机制，中国社会科学出版社，2018
- [2]董千里.深化“一带一路”产能合作的集成场认识,国家治理,2018年10月丁刊（总208期）电子链接：
深化“一带一路”产能合作的集成场认识,国家治理,人民论坛网
<http://www.rmlt.com.cn/2018/1119/533420.shtml>
- [3]董千里.集成场视角:两业联动集成创新机制及网链绿色延伸[J].中国流通经济,2018(1):27-37
- [4]董千里.网链绿色延伸：“一带一路”重卡产能合作的价值链提升[J].中国流通经济,2018(6):3-14.
- [5]董千里.改革开放40 年我国物流业高级化发展理论与实践[J].中国流通经济,2018(8):3-14.
- [6]董千里.境外园区在“一带一路”产能合作中新使命及实现机制[J].中国流通经济,2018(10):26-38
- [7]董锁成、程昊、郭鹏、李富佳、李宇、李泽红、张晓晓、“一带一路”交通运输业格局及对策,2016年 . 第31卷 . 第 6 期663-670
- [8]董千里.基于“一带一路”跨境物流网络构建的产业联动发展研讨——集成场理论的顶层设计思路[J].中国流通经济,2015(10):34-41.
- [9]董千里.“一带一路”背景下国际中转港战略优势及其基核场源建设研究[R],2016中国工程管理论坛编委会,2016中国工程管理论坛论文集,2016:189-195





Thank you !

■ 欢迎合作



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