

Integrated Transport Development in China's Emerging Urban Agglomerations

——A Case Study in the Beijing-Tianjin-Hebei Urban Agglomeration

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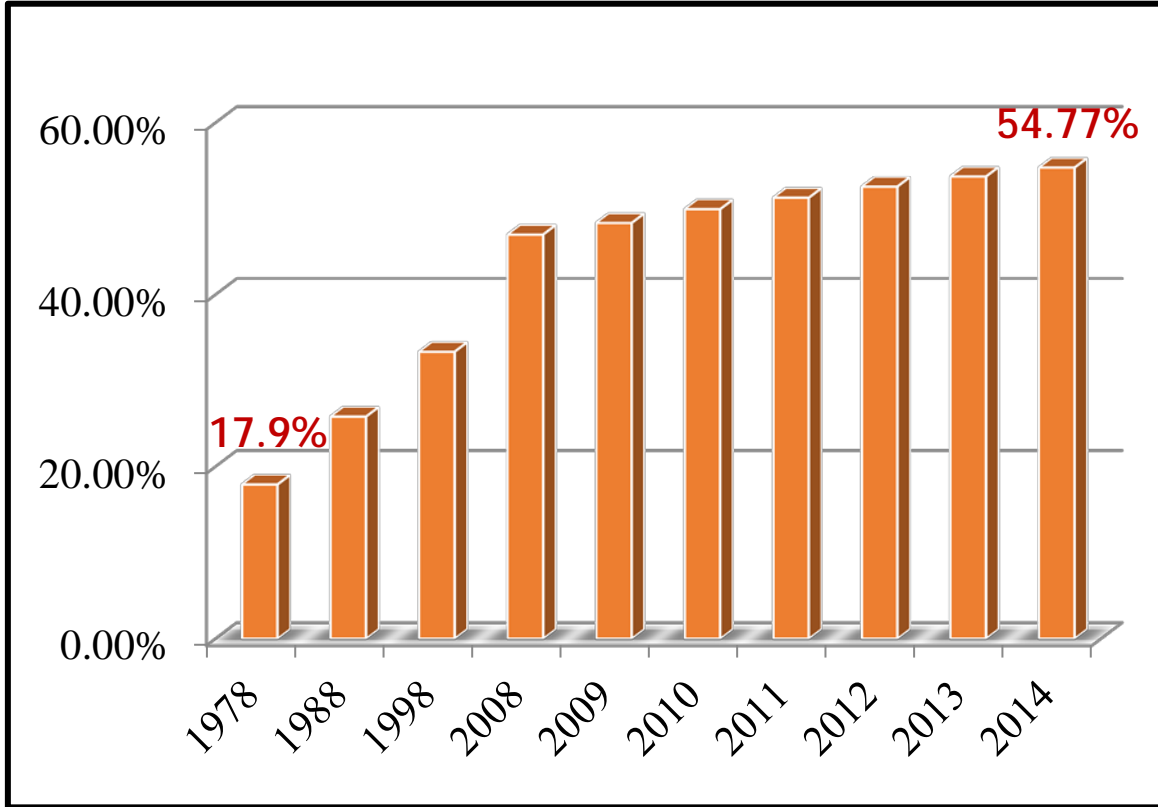


交通运输部规划研究院

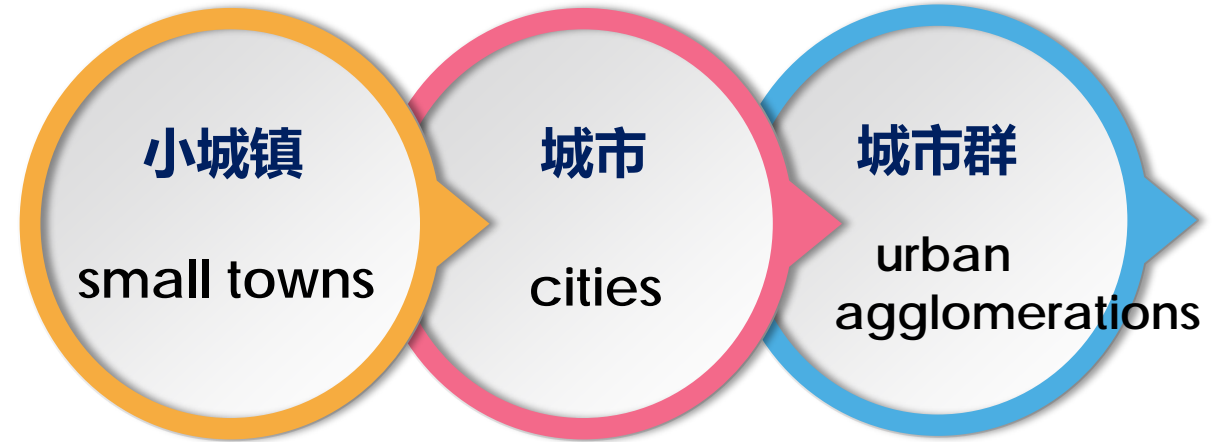
Transport Planning and Research Institute
Ministry of Transport, China

中国城镇化快速发展

Rapid progress of China's urbanization



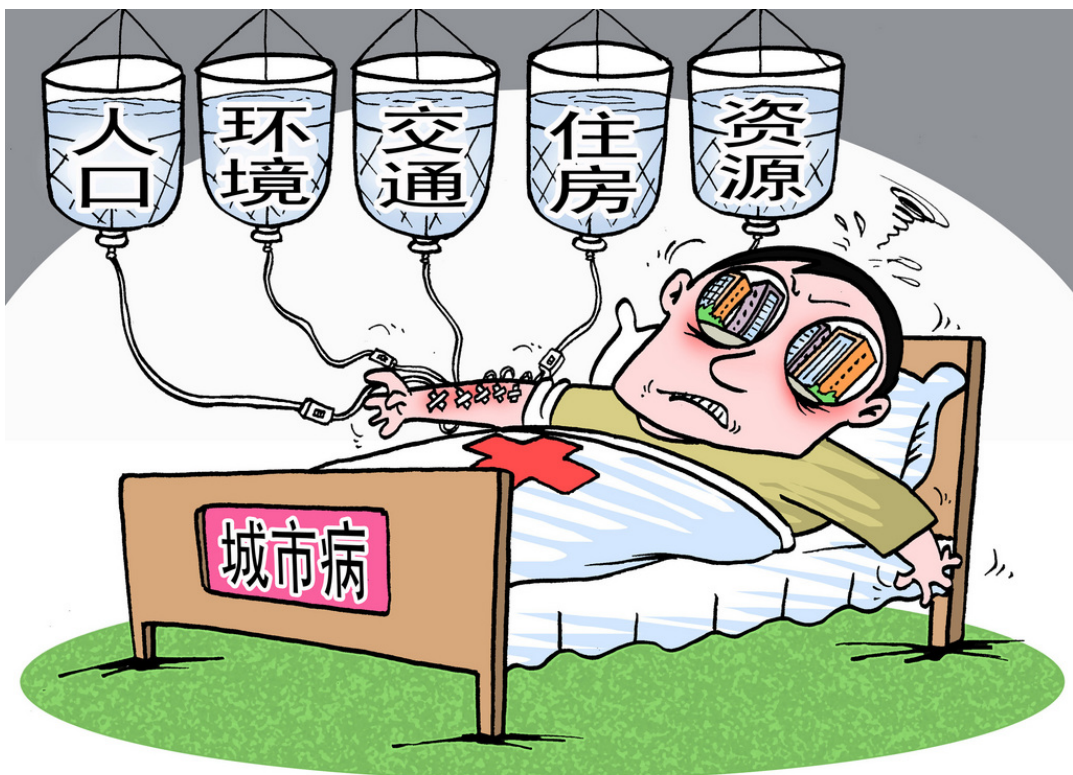
Progress of urbanization in China



传统城镇化模式不可持续

Unsustainability of traditional urbanization mode

“Big city issues”



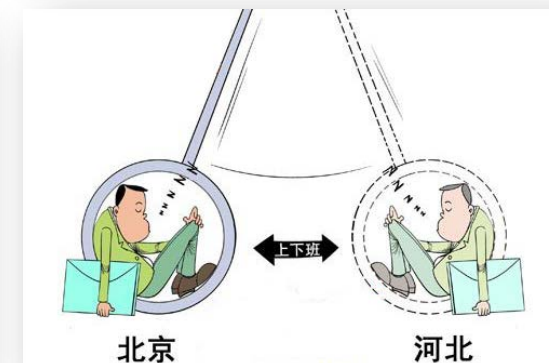
Housing

Resource

Population

Environment

Traffic



中国新型城镇化

Promoting New-type urbanization

《国家新型城镇化规划（2014-2020）》

China's National New-type Urbanization Plan (2014-2020)

- 转变城镇化发展方式
- 城市群为主体形态，大中小城市和小城镇协调发展
- 综合承载力为支撑，提升城市可持续发展水平
- Changing the approach to urbanization
- Balancing the development of cities and small towns
- Enhancing the sustainability of cities



China's Urbanization Strategy:
“Two Horizontal and Three Longitudinal” Axes

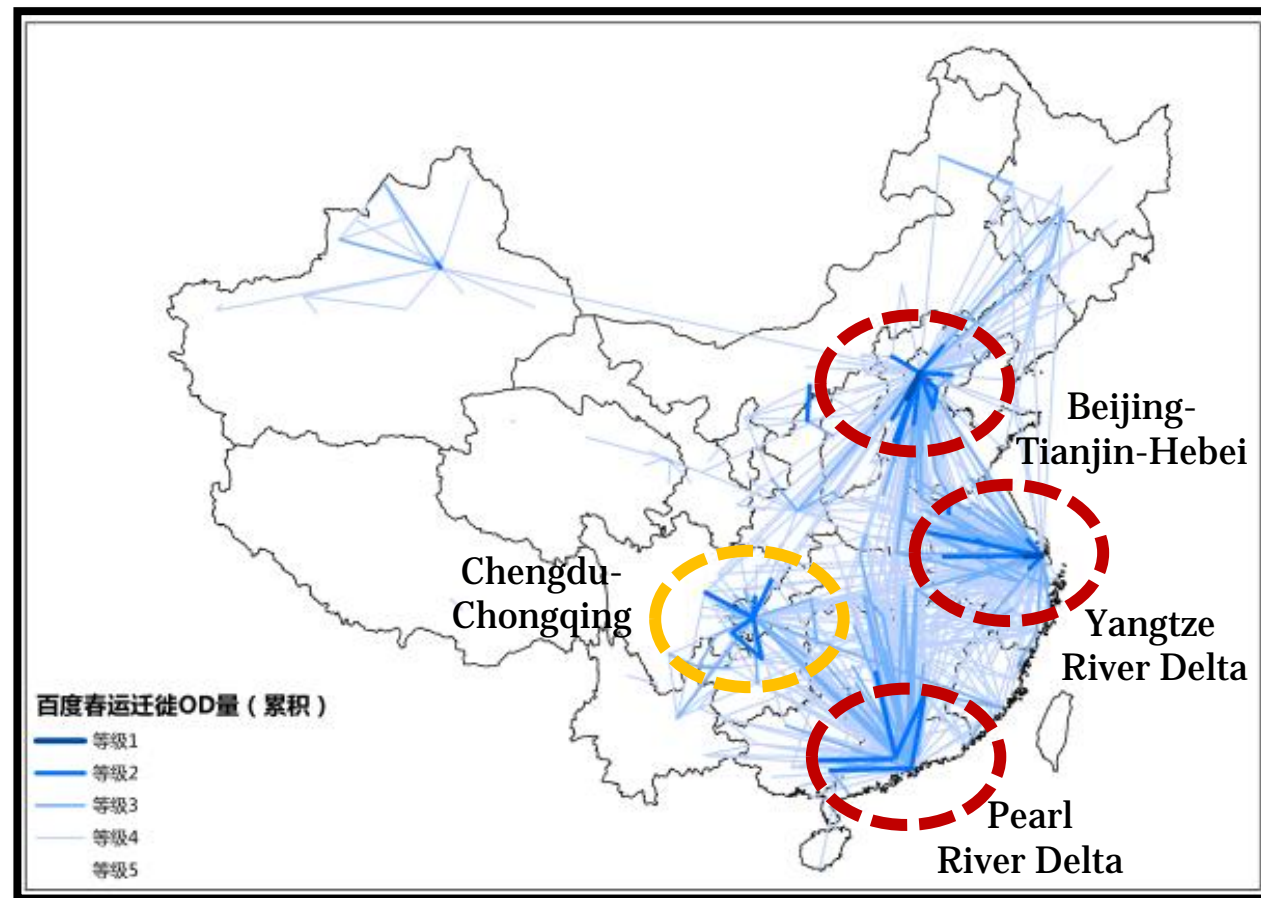
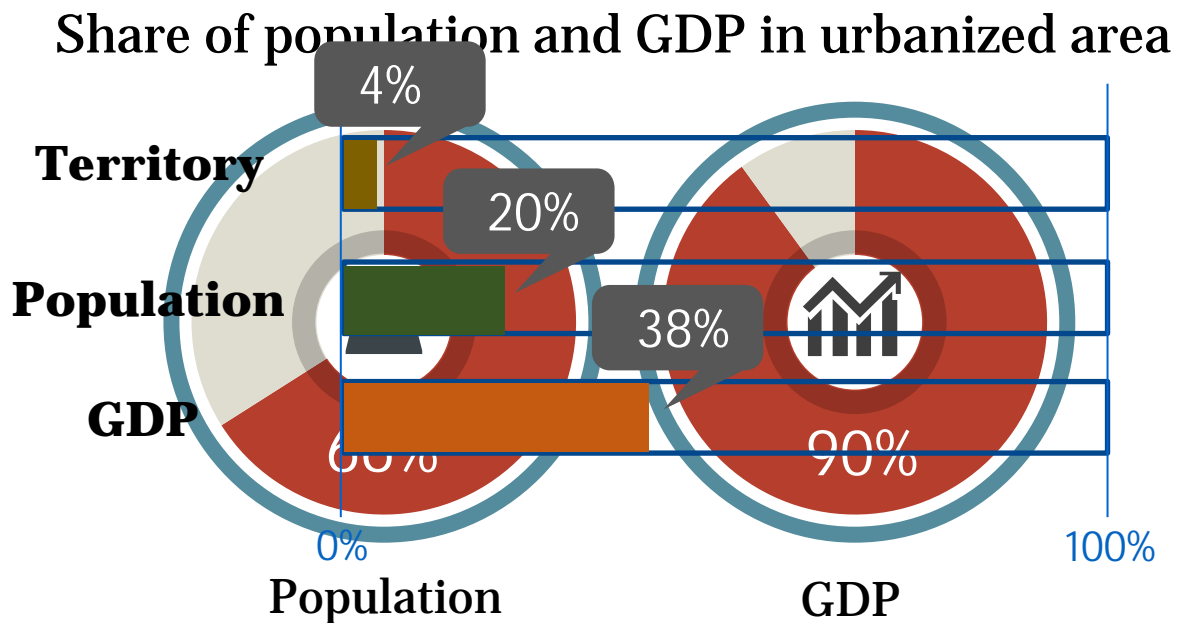
01 中国城市群发展概况

Urban Agglomerations in China



城市群是中国经济集聚的核心区域

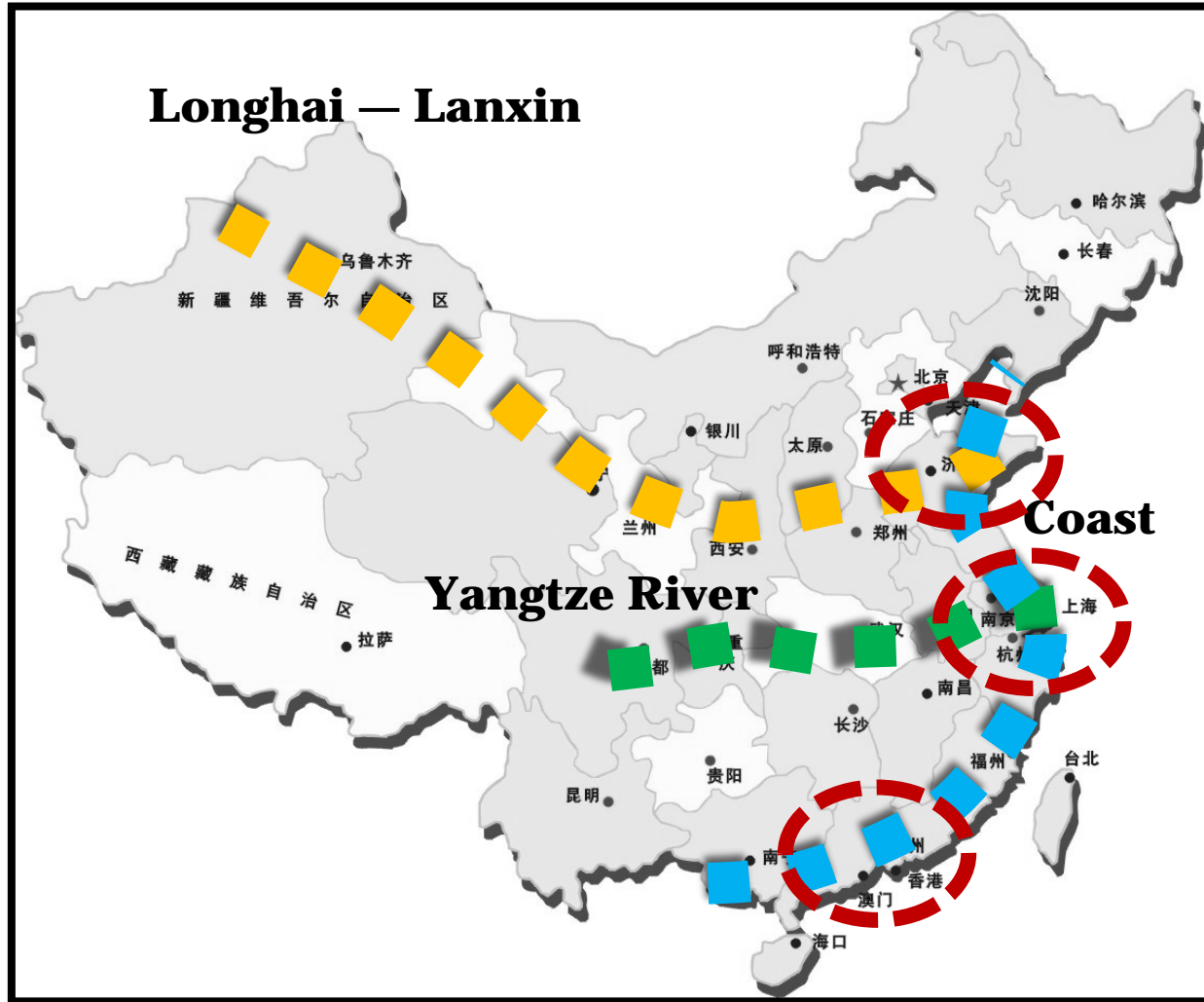
Urban agglomerations are the most economically developed areas of China



Direction of migration before Chinese Spring Festival

城市群沿国家经济交通发展带集聚

Urban agglomerations appear where the economy and transport are well developed



沿海、沿长江、沿陇海—兰新线

Bohai Economic Rim
Yangtze River Delta
Pearl River Delta

π-shaped national spatial development model

城市群空间分布东密西疏

Unbalanced spatial distribution of urban agglomeration

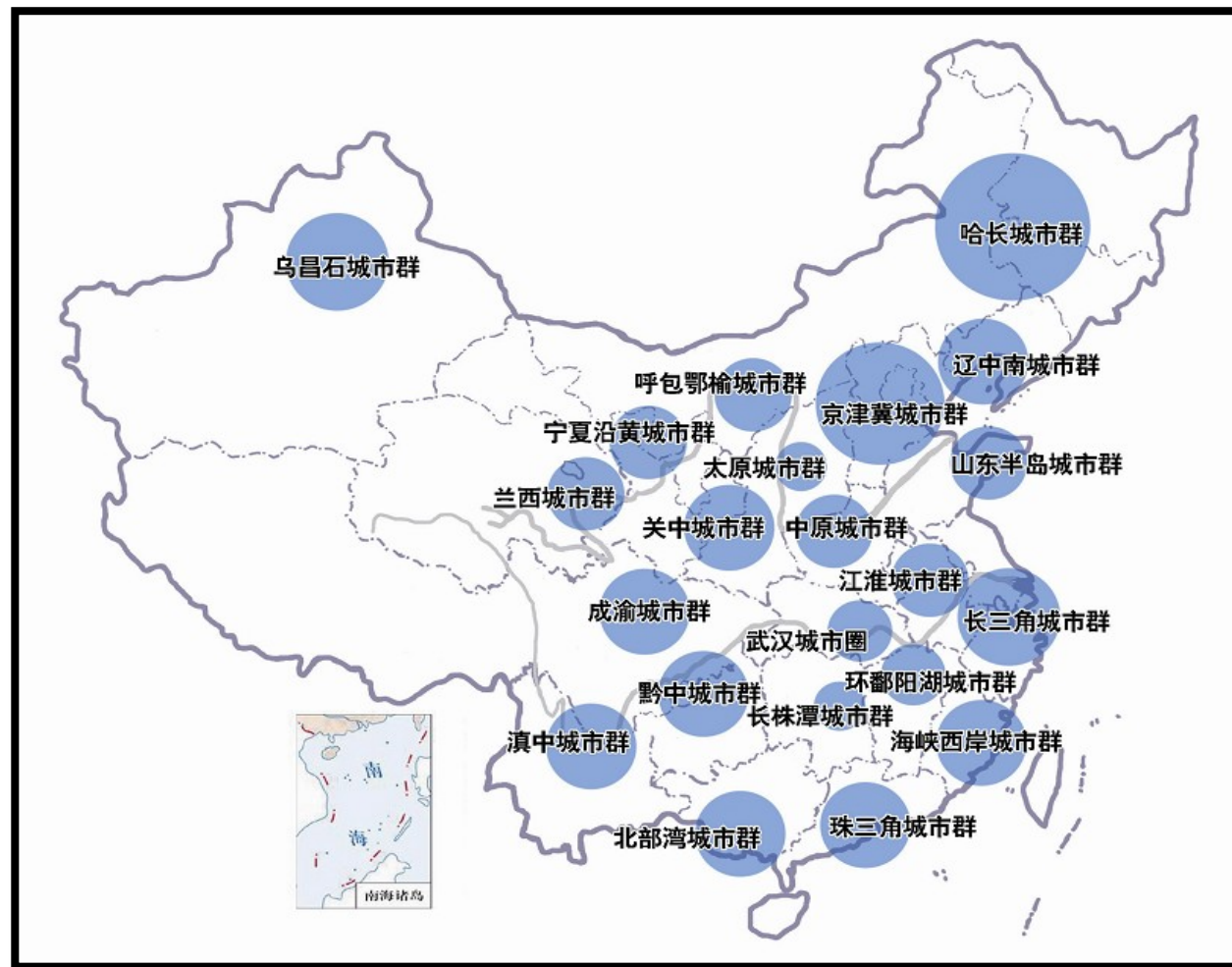
区域不平衡性

东部数量多且分布集中
中西部数量少且分布零散

Unbalanced spatial distribution

In **eastern** China: densely distributed with huge amount

In **central and western** China: sparsely distributed with small amount



城市群发育阶段性差异明显

Significant difference in the stage of development

东高西低特征

东部：相对成熟

中部：正在发育

西部：发育初期

Degree of development

Eastern Region

Central Region

Western Region

单极核

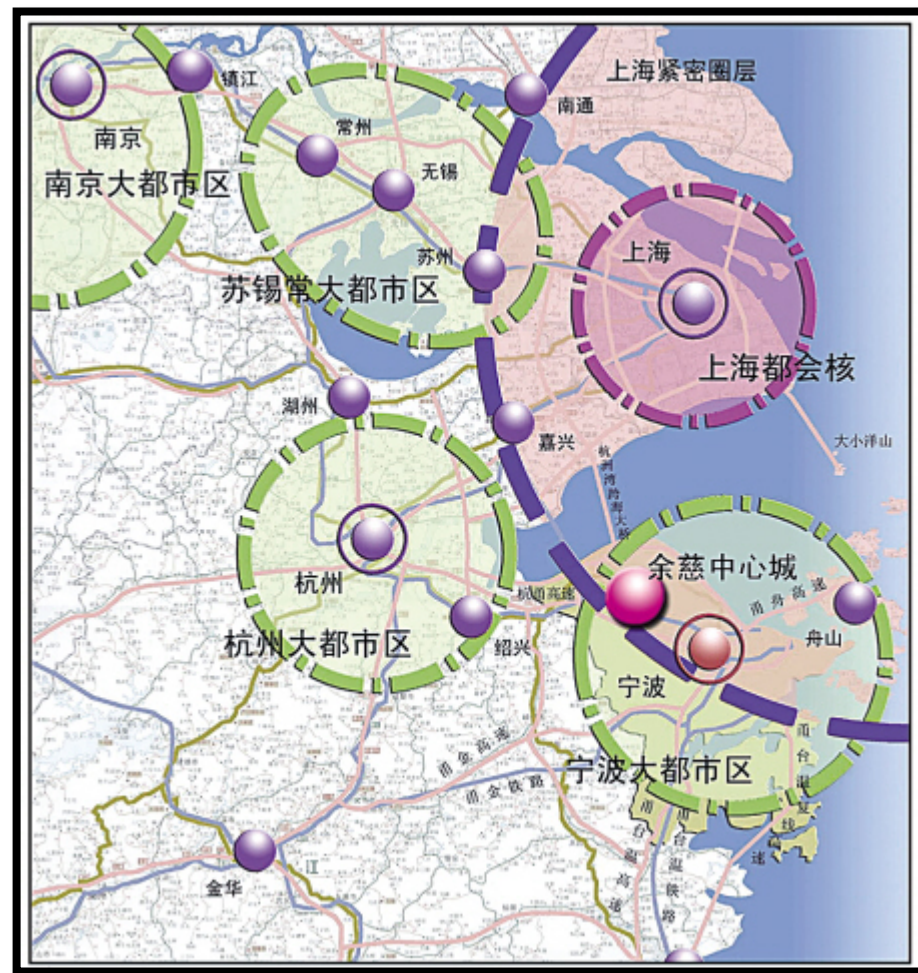
One center

多中心

Multi center

网络化

Networked



The Yangtze River Delta

02 中国城市群交通运输特点与趋势

**Transport in China's Urban Agglomerations:
Characteristics and Trends**



现状特点

Characteristics

1

城市群交通体系结构形态差异较大

Differ widely in the transport structure

2

复合交通廊道成为城市群发展主轴线

Appear mainly along complex transport corridors

3

轨道交通在城市群客运中的作用日益突出

Rail transit plays an important role in passenger transport

4

城市群交通枢纽地位突出

Important transport hubs

5

城市群运输一体化程度较高

Transport is highly integrated

6

区域交通协调发展机制作用初显

Mechanisms for coordinating regional come into play

发展趋势

Development Trends

交通构成复杂，运输强度大
Complex structure, high intensity

人口&出行量
Population &
Trip volume

轴向分布 Axe
↓
网络化分布 Network



200公里以内占95%
95% within 200 kilometers

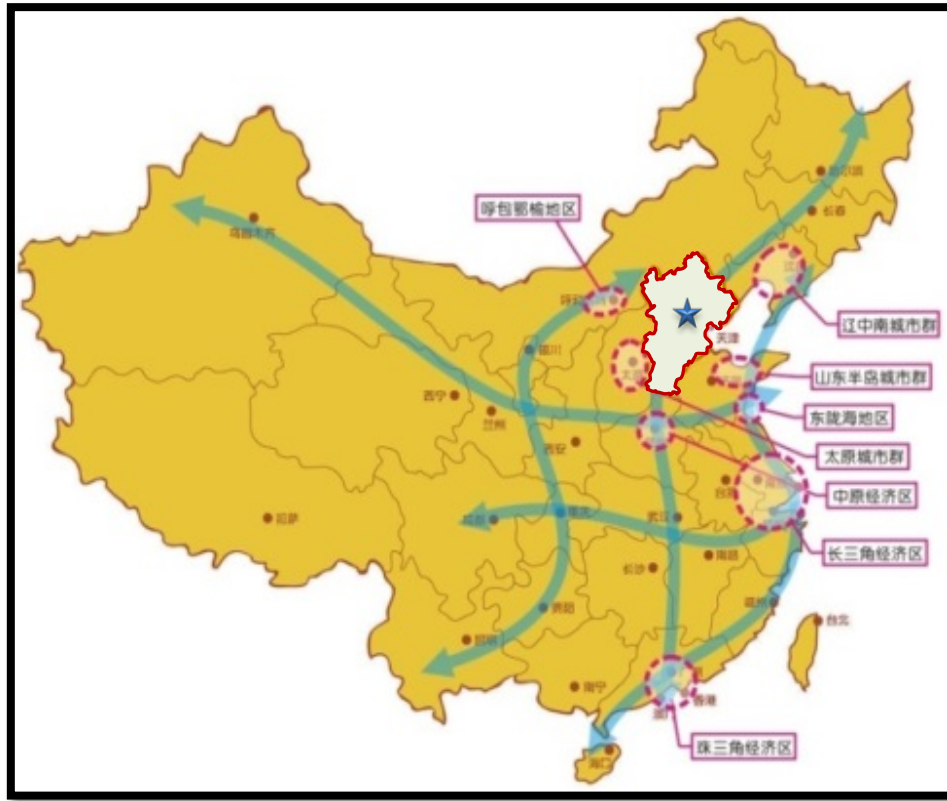
公共交通为主导
Public transit as main form
集约、低碳、环保
Intensive, low carbon,
environmental protection

客运：通勤、商务、旅游、休闲
Passenger: commuting, business, tourism, leisure
货运：小批量、多批次、门到门、时效性
Freight: small lot, multi batch, door to door, timeliness

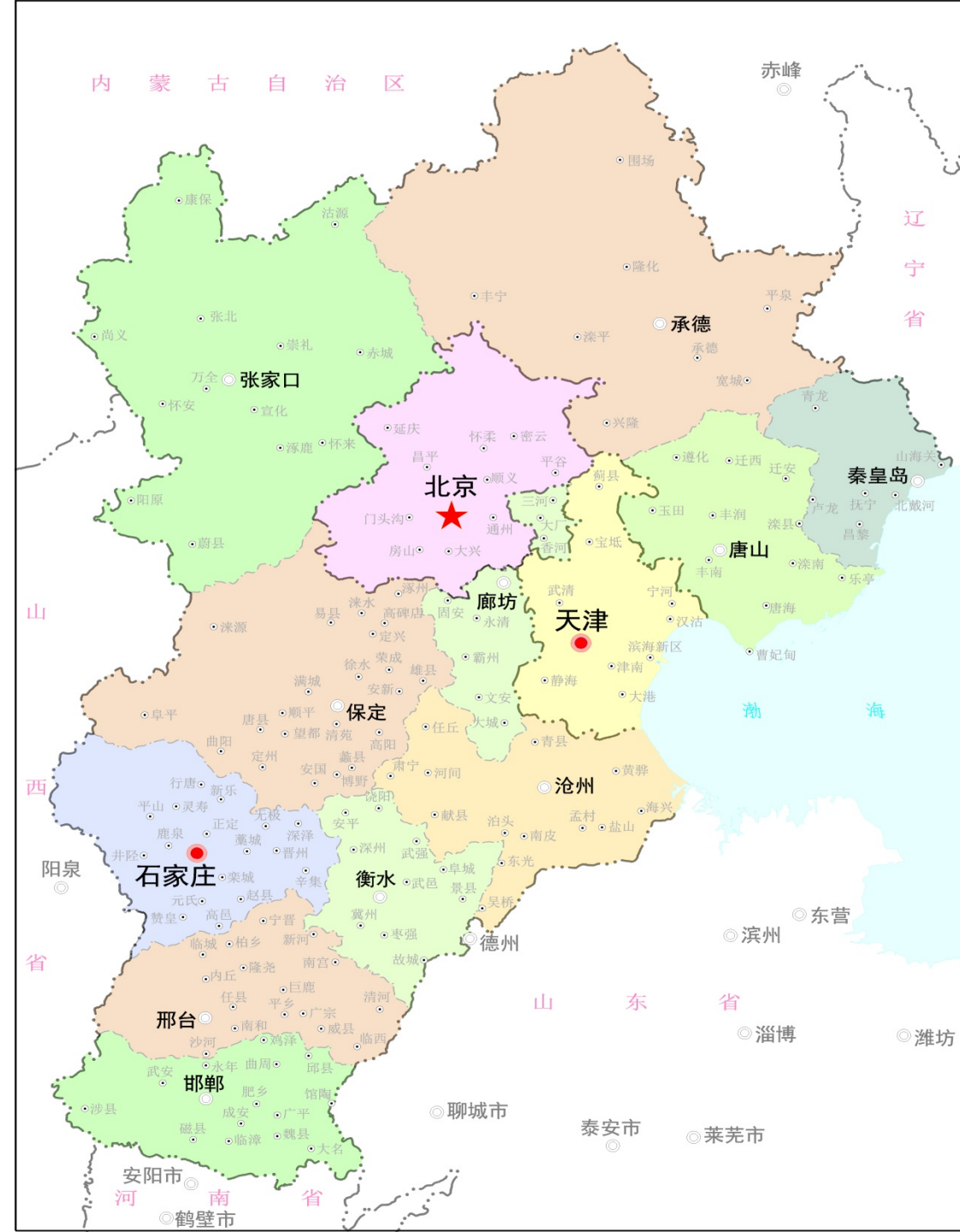
03 京津冀城市群交通一体化案例

**A Case Study of Transport Integration
in the Beijing-Tianjin-Hebei Urban Agglomeration**



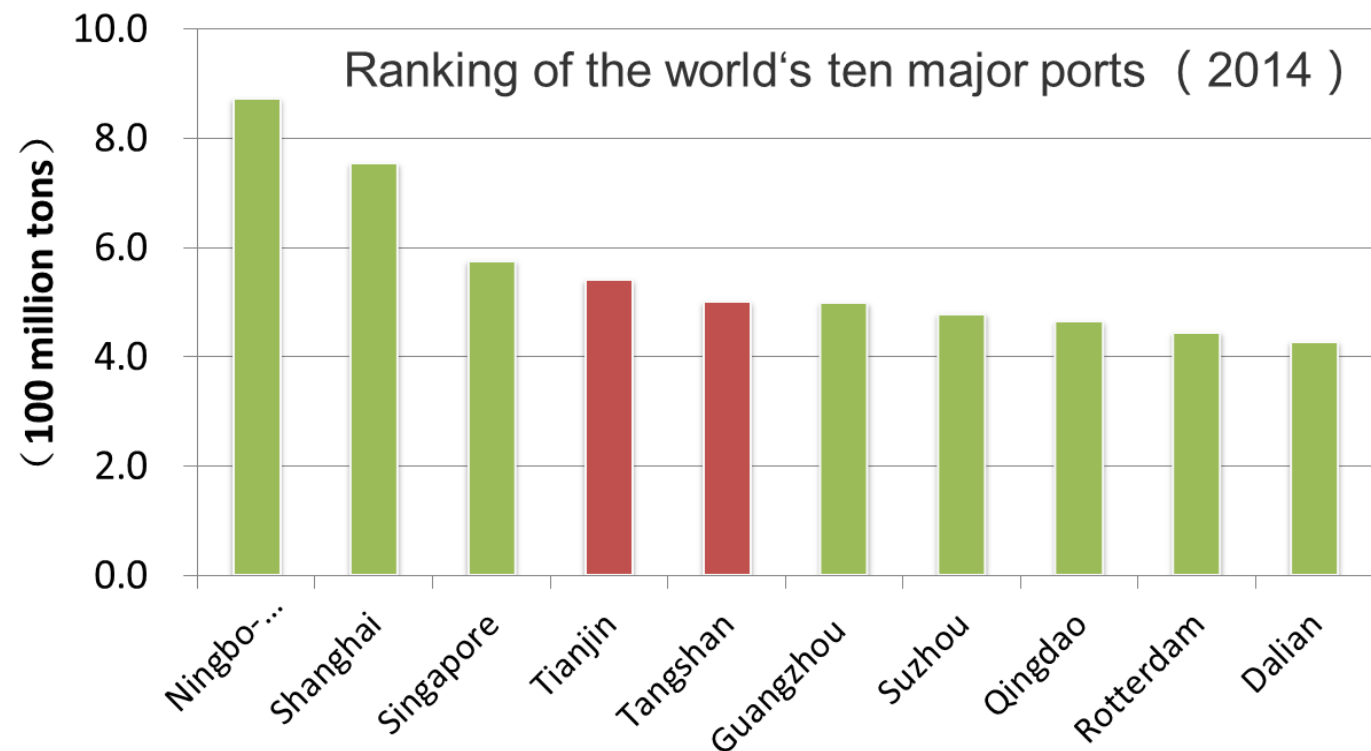


Indicator	Unit	Whole Area	Account for national
Land area	km ²	21.6	2.3%
Resident population	million persons	110.52	8%
GDP	billion yuan	6,647.4	10.4%



京津冀城市群交通发展概况

Transport Development in the Beijing-Tianjin-Hebei Urban Agglomeration



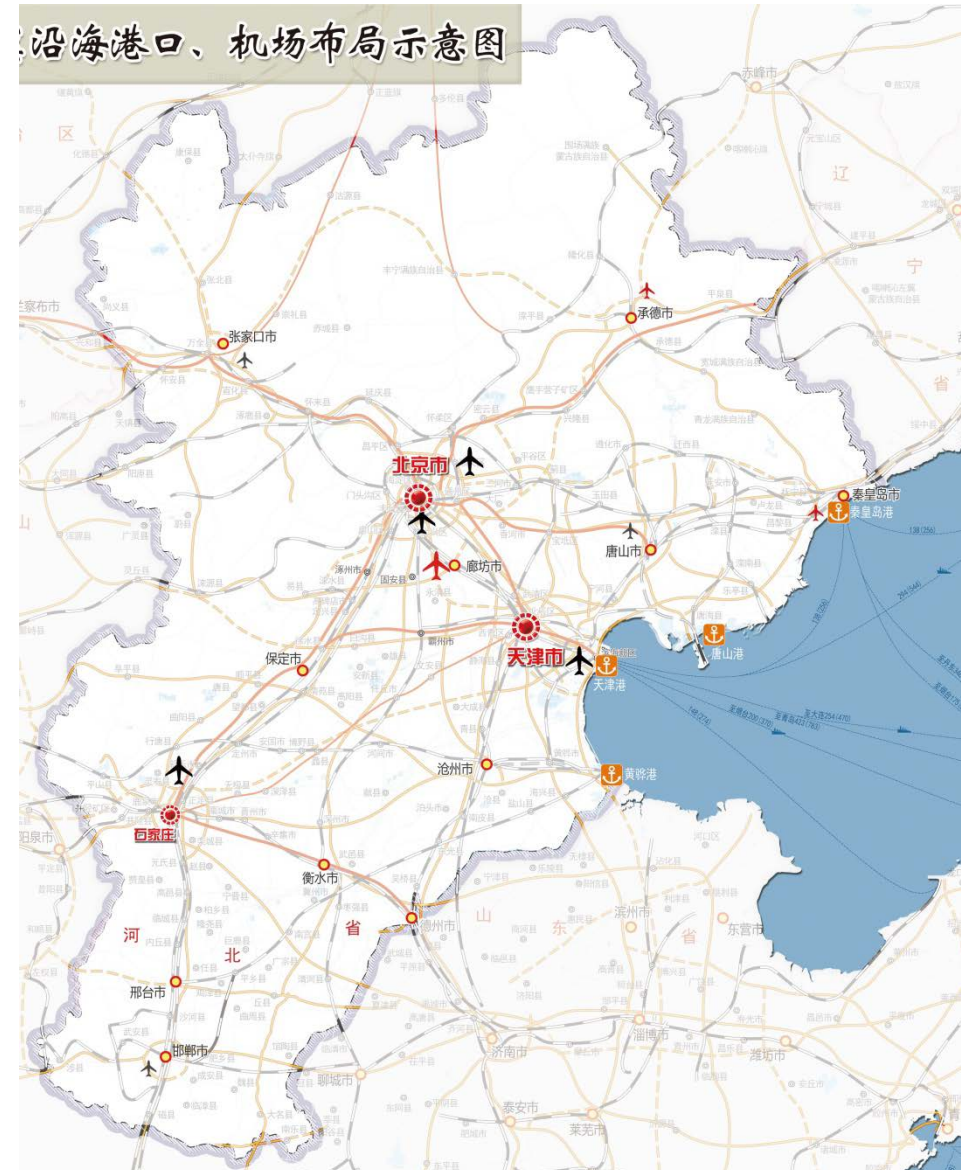
公路网、铁路网密度：全国3倍

Highway、railway density: 3 times of average

首都机场：全球第二

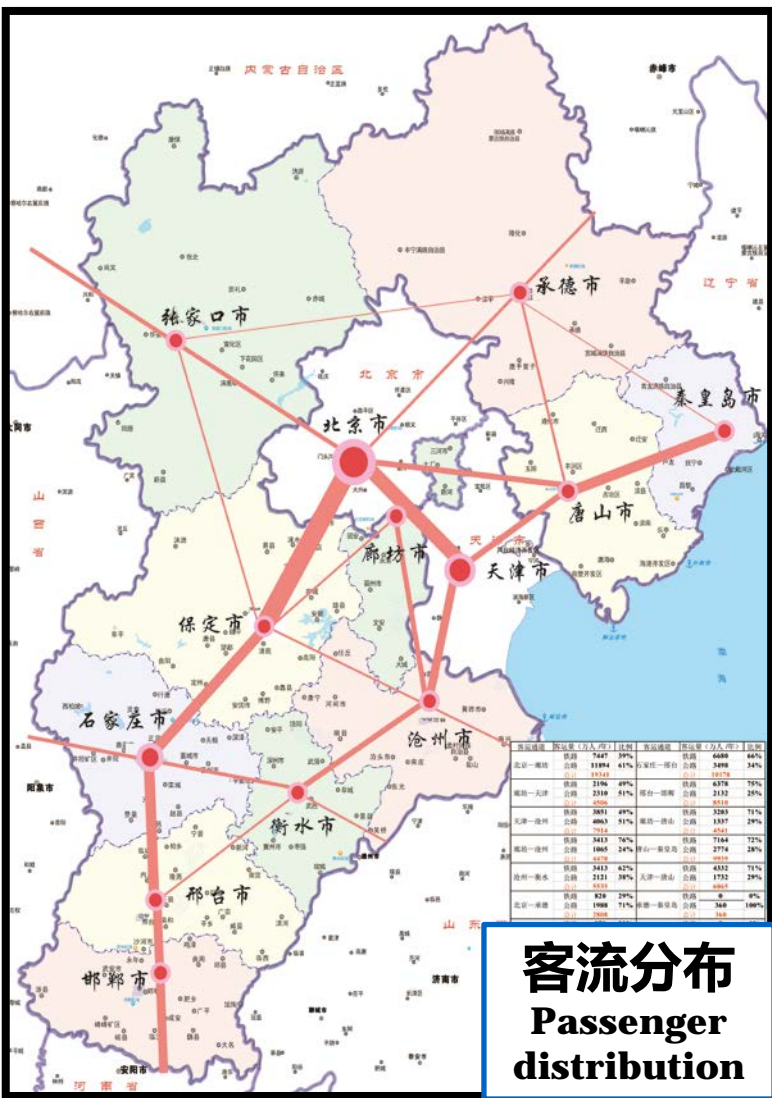
The BCIA: the world's **2nd** busiest

沿海港口、机场布局示意图



京津冀城市群交通发展概况

Transport Development in the Beijing-Tianjin-Hebei Urban Agglomeration



Passenger traffic volume

客运
京广通道
京津通道
北京与周边城市

货运
京津通道
京广通道
沿海通道货运量较大

Freight traffic volume



京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 单中心、放射状的交通网络布局有待优化

monocentric, radiating transport networks await improvement

□ 北京为中心的“放射状”

Radiate from Beijing

互联互通性不强

Low intercity connectivity



Road networks
Transport structures



京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 轨道交通发展滞后，运输结构不合理

Rail transit is underdeveloped and transport structures lack balance.

□ 城际铁路发展滞后

The intercity railways are highly underdeveloped

□ 缺乏大城市中心区与卫星城通勤交通所需市域（郊）铁路

Lack in urban/suburban railways between the built-up areas of big cities and satellite cities

北京——燕郊
跨省的双城生活

Beijing——Yanjiao, Hebei province



京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 交通枢纽协同发展不够，各种运输方式衔接不畅

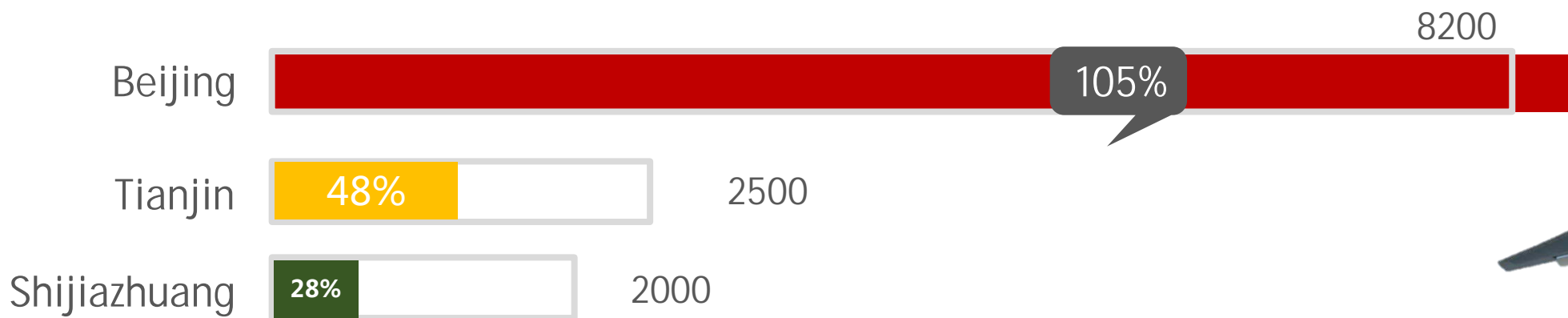
Transport hubs are not developed in a coordinated fashion and there is a lack of smooth connection between different means of transport.

□ 北京客货运输中转和组织中心功能过于集中

Beijing is over-burdened as a regional transit and organizational center for passenger transport and freight

□ 枢纽站场换乘换装效率不高

Low efficiency in transferring between different means of transport



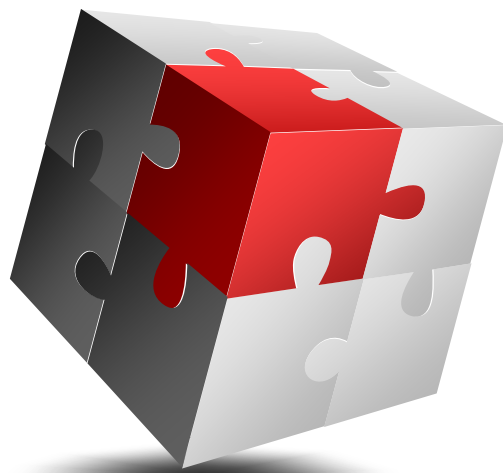
京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 三地客货运输一体化、便利化水平不高

Passenger transport and freight are not fully integrated and the level of convenience is low

- 行政壁垒
- 运输政策、标准
- 协调机制
- 统一运输市场



- Administrative barriers
- Transport policies and standards
- Coordination mechanisms
- Integrated transport market

京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 信息资源共享程度不高，现代化管理水平有待提升

Information sharing is not adequate and management is yet to be modernized.

- 信息共享困难
- 业务协同程度较低
- 先进信息技术手段应用不够
- Hard to share information
- Low service coordination
- Insufficient advanced technology

Hard to share information and coordination



京津冀交通一体化面临的突出问题

Problems Faced by Transport Integration in Beijing-Tianjin-Hebei

➤ 发展方式相对粗放，交通运输安全发展和节能减排的挑战日益增强

Transport development is extensive and faces growing **safety** and **environmental** challenges

- 重大交通基础设施运行安全
- 运输装备运营安全
- 尾气排放——大气污染
- Ensure safety of Transport facilities
- Ensure safe operation
- Exhaust gas

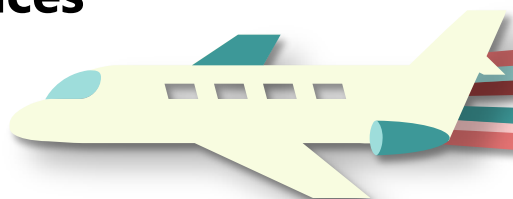


京津冀交通一体化解决方案

Transport Integration Solutions

网络化布局、智能化管理、一体化服务

- ✓ Networked system
- ✓ Smart management
- ✓ Integrated services



“安全、便捷、高效、绿色、经济”

一体化综合交通运输体系

“safety, convenience, high efficiency,
environment-friendliness, and economy”

Integrated transport system

基础设施网络
(Infrastructure network)



枢纽功能配置
(Function of transport hubs)



一体化运输服务
(Integrated transport services)



智能化交通管理
(ITM)



协调推进机制
(coordination mechanism)



集约低碳安全
(Intensive, low-carbon, safe)



京津冀交通一体化解决方案

Transport Integration Solutions

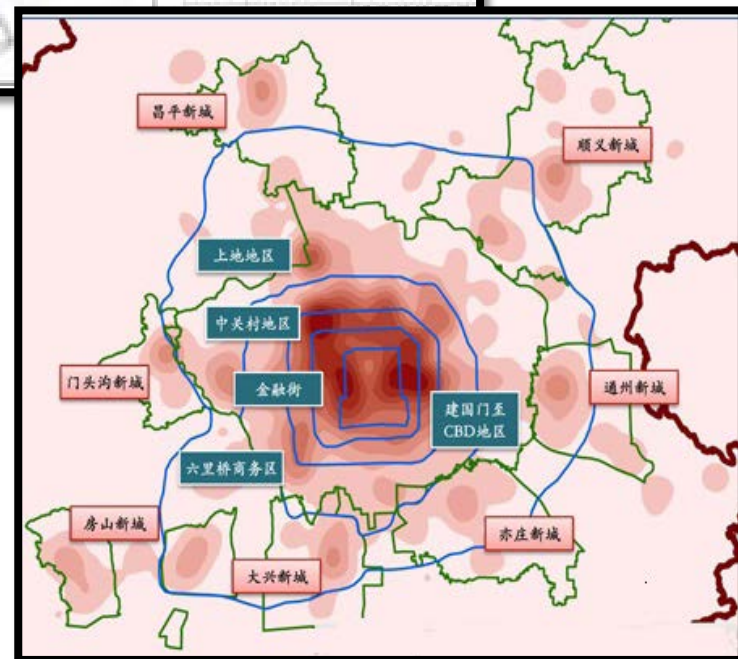
完善综合交通基础设施网络

- 多中心、网格状”路网格局
- 综合运输大通道
- “轨道上的京津冀”
- 完善便捷通畅公路交通网



Improving the infrastructure network

- Multi-center , networked structure
- Arteries for integrated transport
- “Beijing-Tianjin-Hebei on the rails”
- Convenient and unobstructed highway network

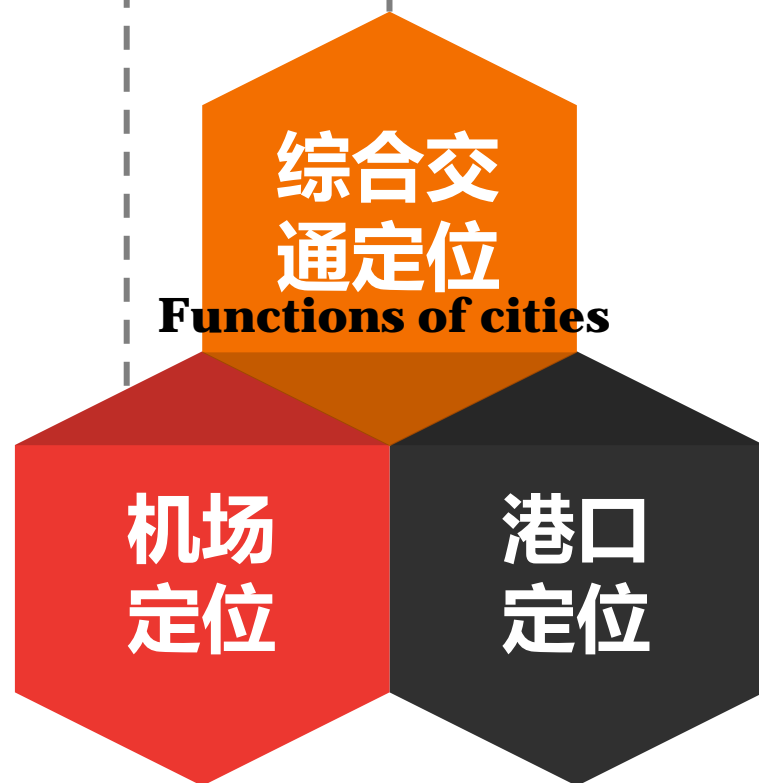


京津冀交通一体化解决方案

Transport Integration Solutions

优化配置京津冀交通枢纽功能

Giving better play to transport hubs



Functions of cities

Airport resources

Port resources

北京：国际交往门户作用

天津：区域货运组织和物流中心

石家庄、唐山、保定：提升运输组织服务能力

北京：国际交往门户

天津：国际航空物流中心

石家庄：低成本航空，区域航空枢纽

天津港：北方国际航运核心区

河北港口：能源、原材料等大宗物资

加强港口资源共享共用

京津冀交通一体化解决方案

Transport Integration Solutions

提升区域一体化运输服务水平

- 信息联通、标准规范对接、票据单证统一
- 货运“一单制”、客运“一票制”
- 出行信息综合服务、多式联运



Providing better integrated transport services

- Information sharing, coordination of standards and regulations, application of universal paper documents
- **“One-bill system”** for freight, **“One-ticket system”** for passenger
- Comprehensive travel information services, Intermodal transport



京津冀交通一体化解决方案

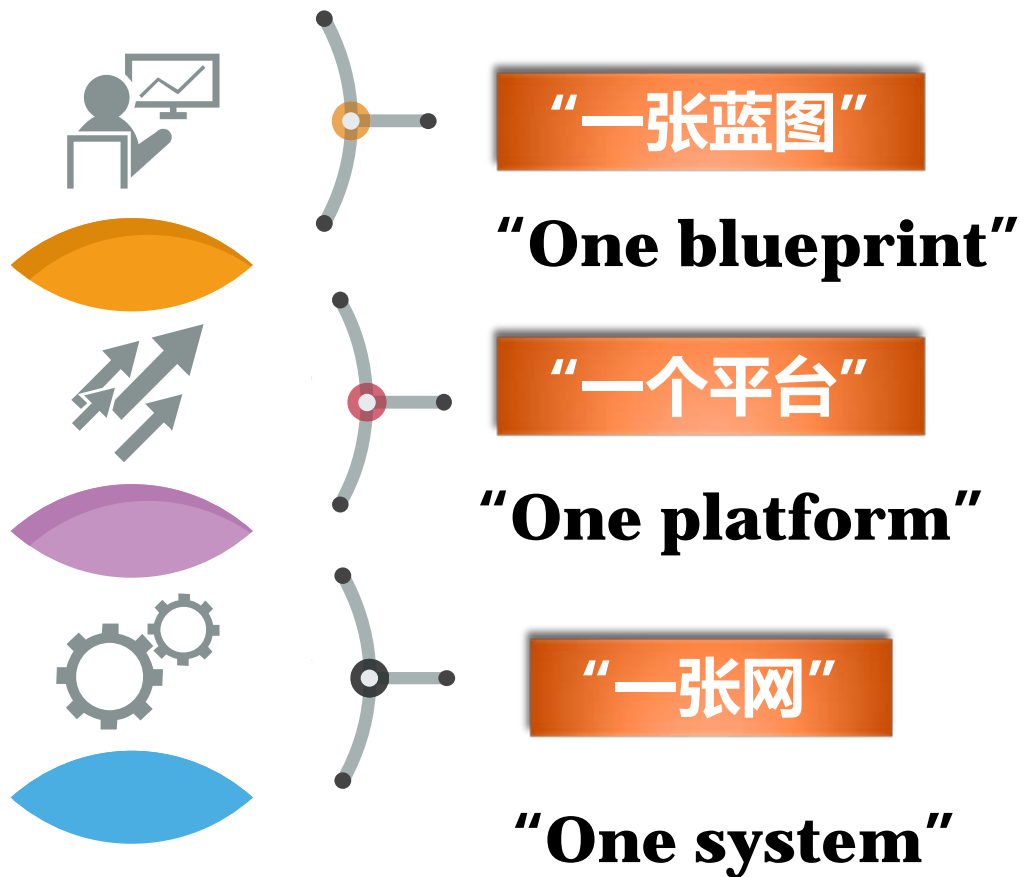
Transport Integration Solutions

提高交通智能化管理水平

- 打破行政分割、市场壁垒
- 区域公平开放统一透明的运输市场

Managing transport in a smarter way

- Remove Administrative and market barriers
- establish an open, fair, transparent, and integrated transport market



京津冀交通一体化解决方案

Transport Integration Solutions

建立有效的协调推进机制

Establishing an effective coordination mechanism

“规划同图、建设同步、运输一体、管理协同”

- Consistent plans
- Synchronous construction
- Integrated transport
- Coordinated management

推进交通集约低碳安全发展

Promoting the intensive, low-carbon development of transport

公交优先、协同联动安全保障体系、绿色循环低碳交通

- Public transit first
- Integrated transport safety management system
- Green and low carbon transportation



04 中国城市群综合交通发展策略

**Strategies for Developing Integrated Transport
in China's Urban Agglomerations**



交通发展策略

Transport development Strategies in China's Urban Agglomerations

Multiple Transportation Mode

Transport — Economy



Transportation resources in different cities

Transport — Resources and environment carrying capability

Hubs



Networks

Transport arteries

“点空间” — “网络空间” — “流空间”

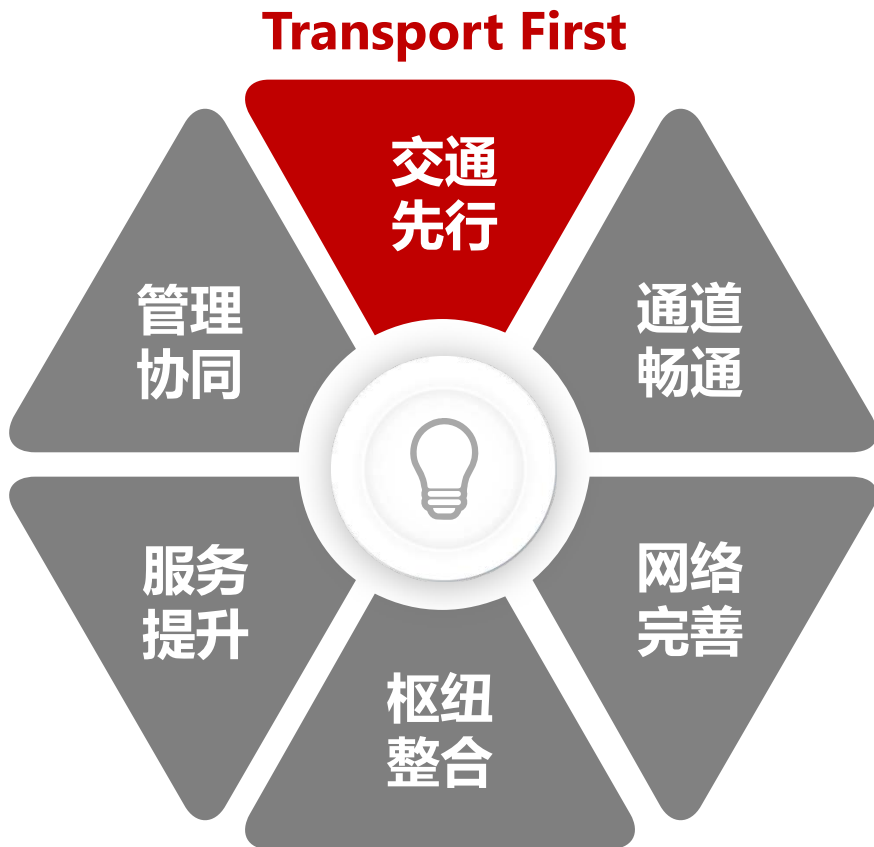
Space of dot

Space of network

Space of flow

以长远需求为导向的交通先行策略

“Transport First” Strategy Catering to Long-term Needs

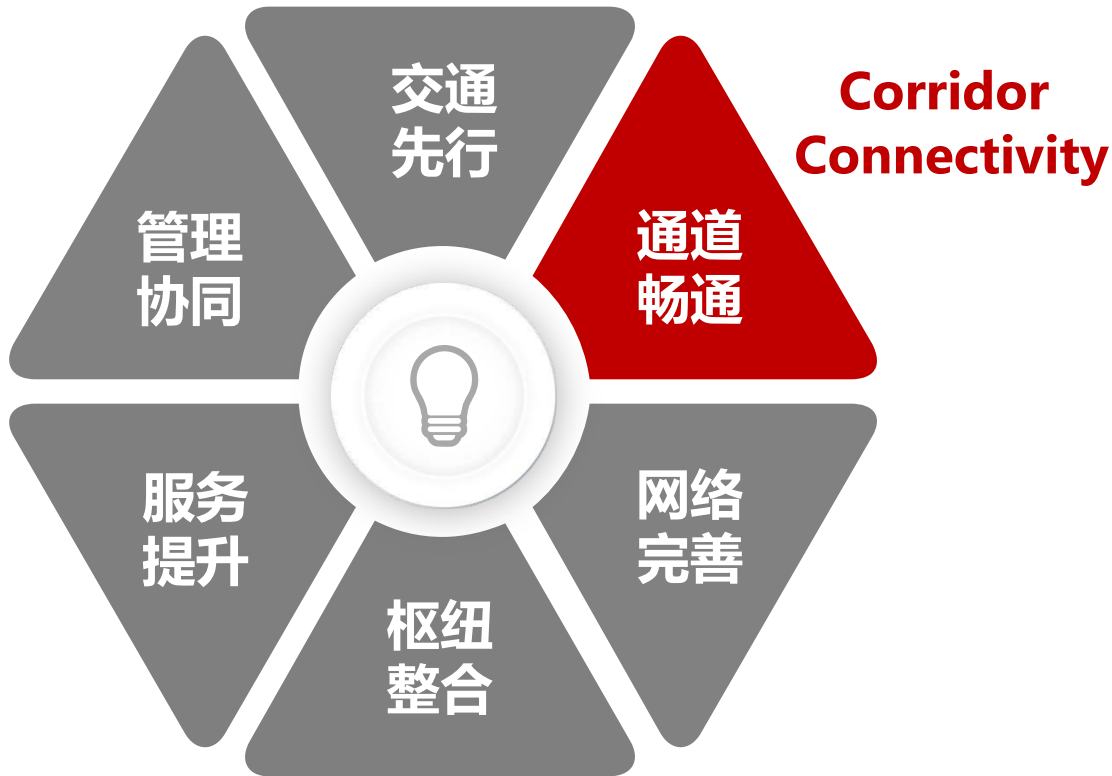


- ✓ 优化调整城市群空间格局，
依靠交通网络塑造城市群发展轴线
- ✓ 考虑长远需求，适度超前，
预留可持续发展空间

- ✓ Improve the spatial organization of urban agglomerations, transport networks are used to shape the spatial structure
- ✓ Consideration on the long-term needs, built in advance, leaving space for its sustainable development

以快速交通为骨架的通道联通策略

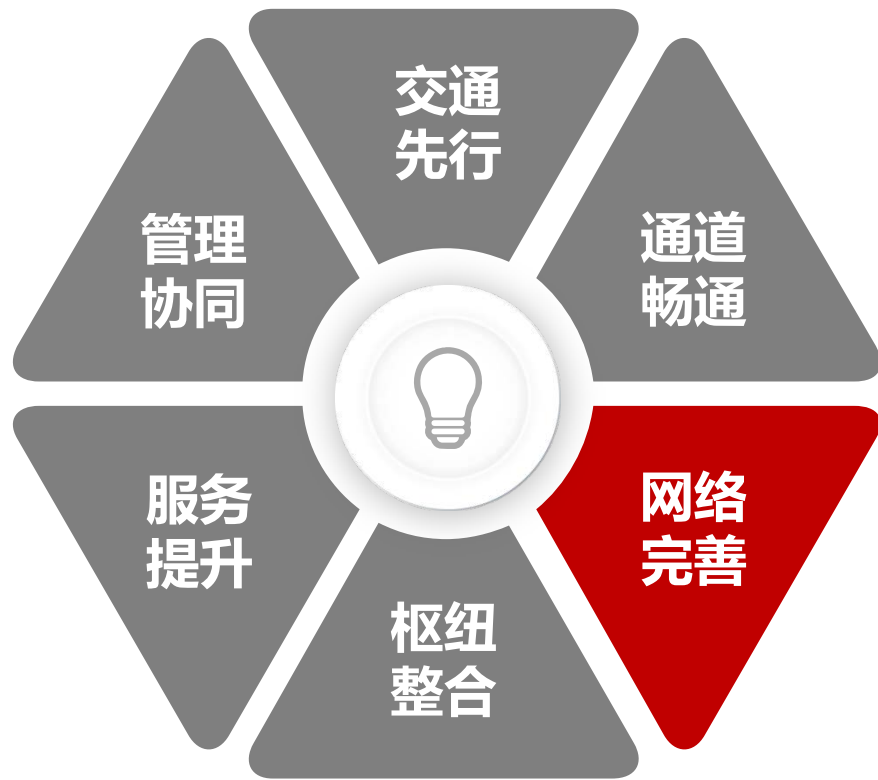
“Corridor Connectivity” Strategy Featuring Rapid Transit



- ✓ 拉近城市间时空距离，
促进城市合理分工和经济紧密联系。
- ✓ 轨道交通、高速公路
快速、大容量的复合型综合运输通道
城市之间交通主轴线
- ✓ 加强对外门户建设，外向交通，
主要经济区&全球交通联系。
- ✓ Close the distance of cities
- ✓ Build rapid transit systems
- ✓ Build gateways to the outside world

以互联互通为目标的网络完善策略

“Network Improvement” Strategy for Achieving Full Connectivity

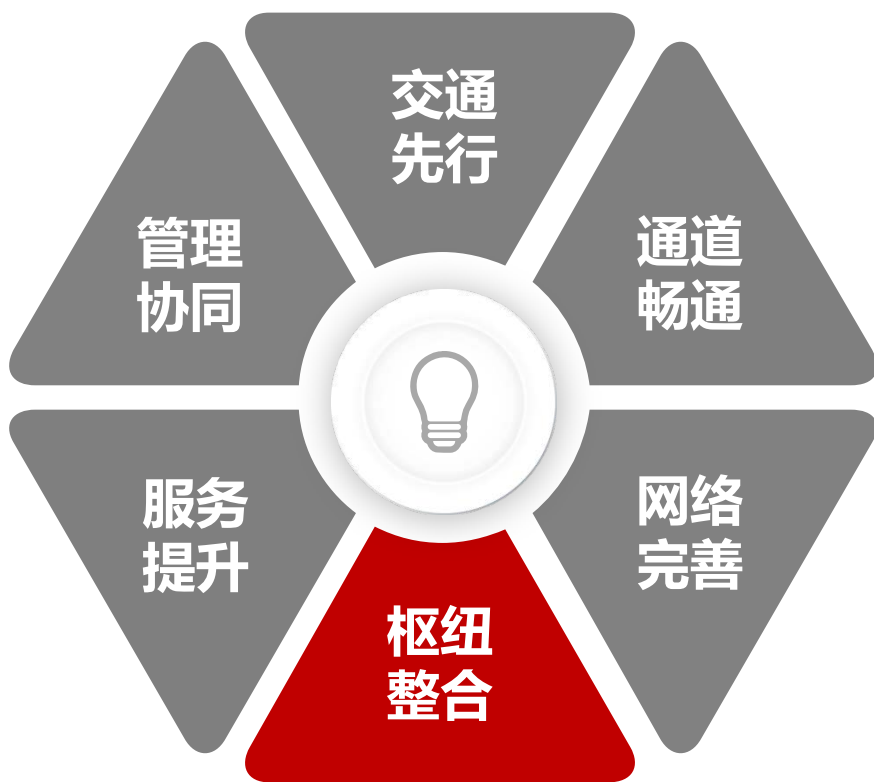


**Network
Improvement**

Relationship	Characteristic	Main Transportation
Between the cities in their centers	Urban integration	intercity railways expressways
Cities in the center /secondary cities	Fast & convenient	expressways trunk railways
Between secondary cities	Direct transport links	expressways trunk highways,
Built-up areas of cities /satellite cities	Commuting	suburban railways Expressways rapid shuttle transit
Cities /small towns	Interconnectivity	national/provincial trunk highways rural highways

以分工合作为主线的枢纽整合策略

“Hub Integration” Strategy Focused on Defining Specific Roles

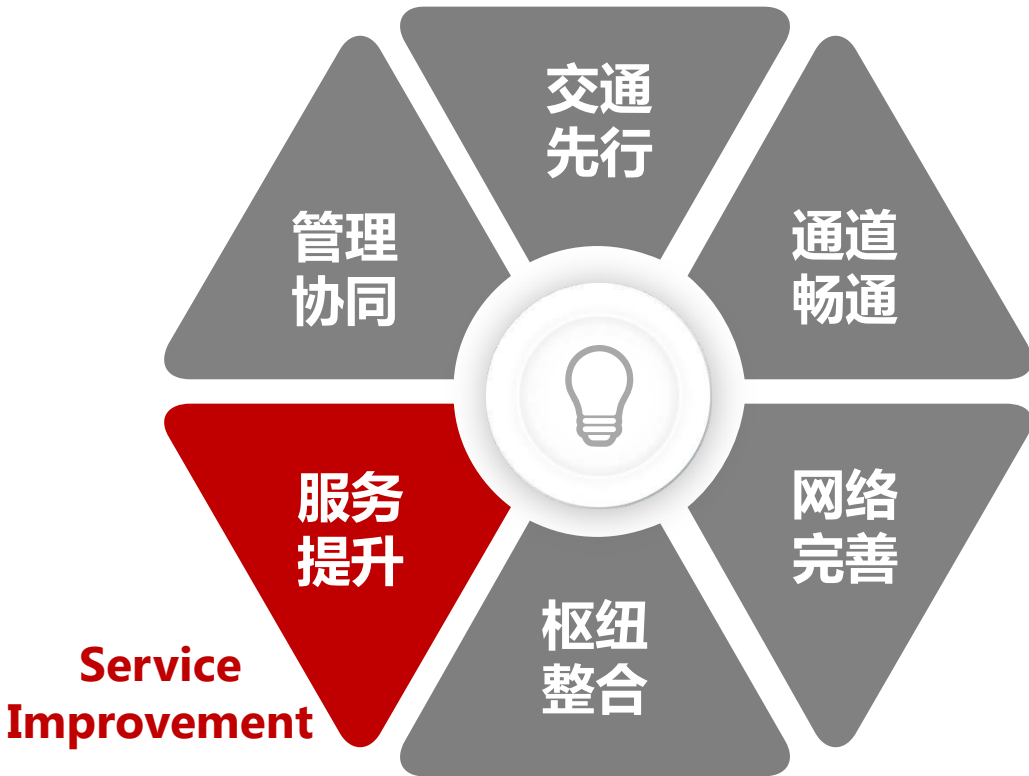


Hub Integration

- ✓ 机场、港口等大型交通枢纽
- ✓ 功能定位、合理分工
- ✓ 市场为基础、资本为纽带
- ✓ seaports and airports, and other large hubs
- ✓ define the roles
- ✓ coordinated and market-based approach

以信息化和智能化手段为引领的服务提升策略

“Service Improvement” Strategy Relying on Information Technology

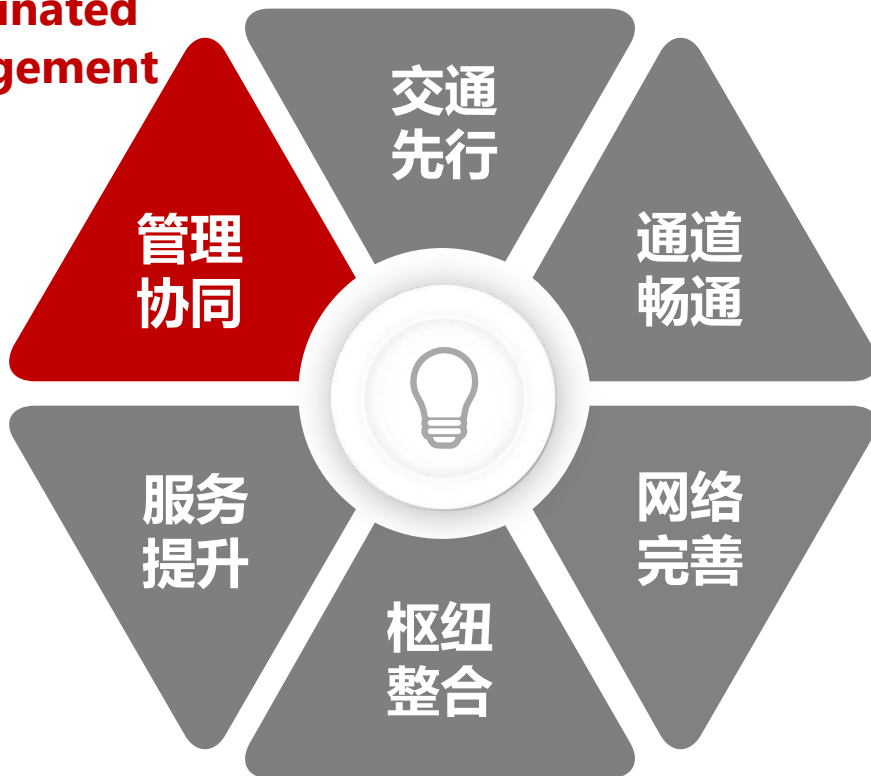


- ✓ 现代信息技术与交通运输深度融合
- ✓ 科技进步和信息化为引领，以标准化为支撑
- ✓ 一体化、便利化
- ✓ Close integration of modern information technology with transport
- ✓ Technology to lead, standards to support
- ✓ Integration and facilitation

以打破壁垒为核心的管理协同策略

“Coordinated Management” Strategy Centered on Removing Barriers

Coordinated
Management



- ✓ 强有力的协调机制=基础保障
 - ✓ 交通资源整合与综合利用
 - ✓ 规划建设、政策制定、标准规范、行政执法
-
- ✓ Strong coordination mechanism
 - ✓ Integration and efficient use of transport resources
 - ✓ transport planning, policy making, standard formulation, and law enforcement

Thanks

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