

Non-Motorized Transport (NMT) Development



Gerald Ollivier
Transport Cluster Leader
Transport Global Practice
The World Bank

In China, national plan and policy prioritize NMT development



□ **The 13th Five Year Plan**

- ❖ Promoting green mobility including walking and biking for low-carbon transport development.



□ **MOHURD Guideline on NMT**

- ❖ For mega cities and large cities: integrate NMT with public transit system for urban mobility.
- ❖ For medium cities and small cities: develop NMT as a main mode of urban mobility.



CONTENT

01 /

Bike Sharing Advances NMT

02 /

**Innovative Approach to Improve NMT
Environment: On-going Pilot in Tianjin,
China**

03 /

Conclusions

The background of the slide is a light gray network of interconnected nodes and lines, forming a globe-like structure. The nodes are represented by small black and gray dots, and the lines are thin, light gray connections between them. The network is denser on the left and right sides, creating a curved, spherical appearance.

01

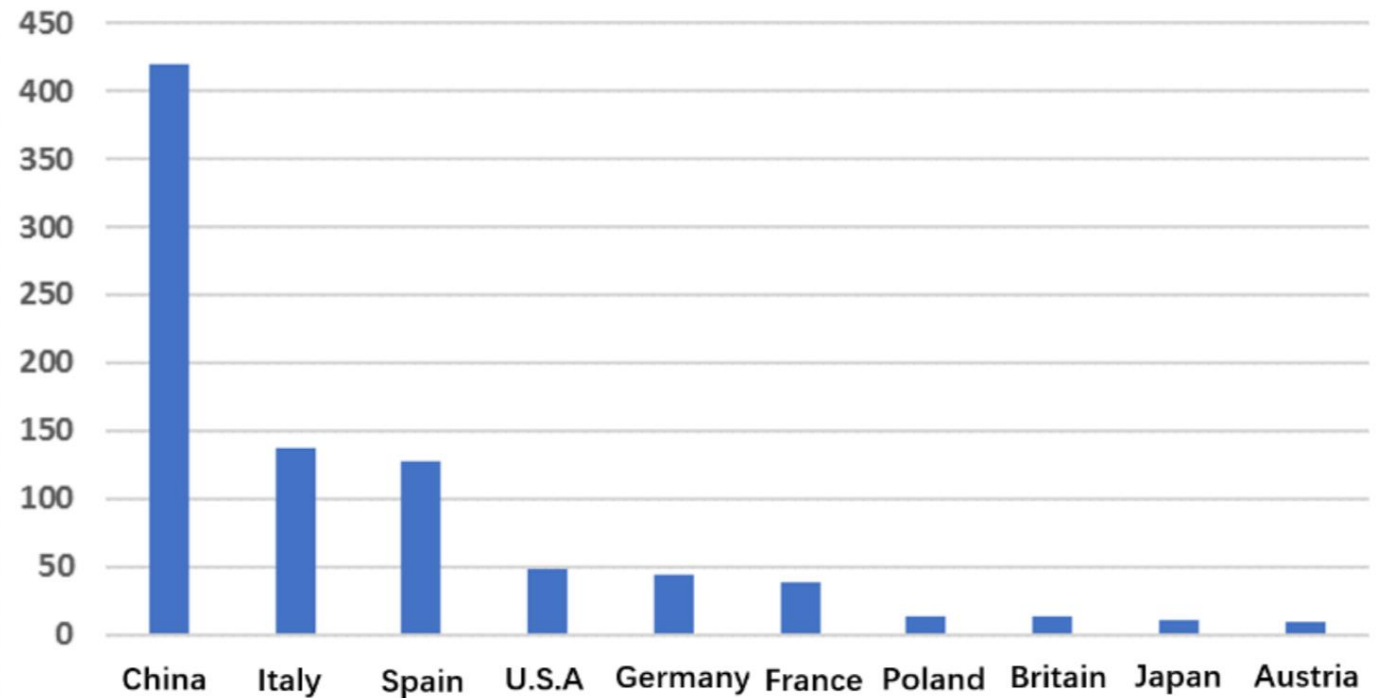
Bike Sharing Advances NMT

Biking is going through a rebirth globally

Over **1,000 cities** operate **docked** public bike sharing (PBS) throughout the world

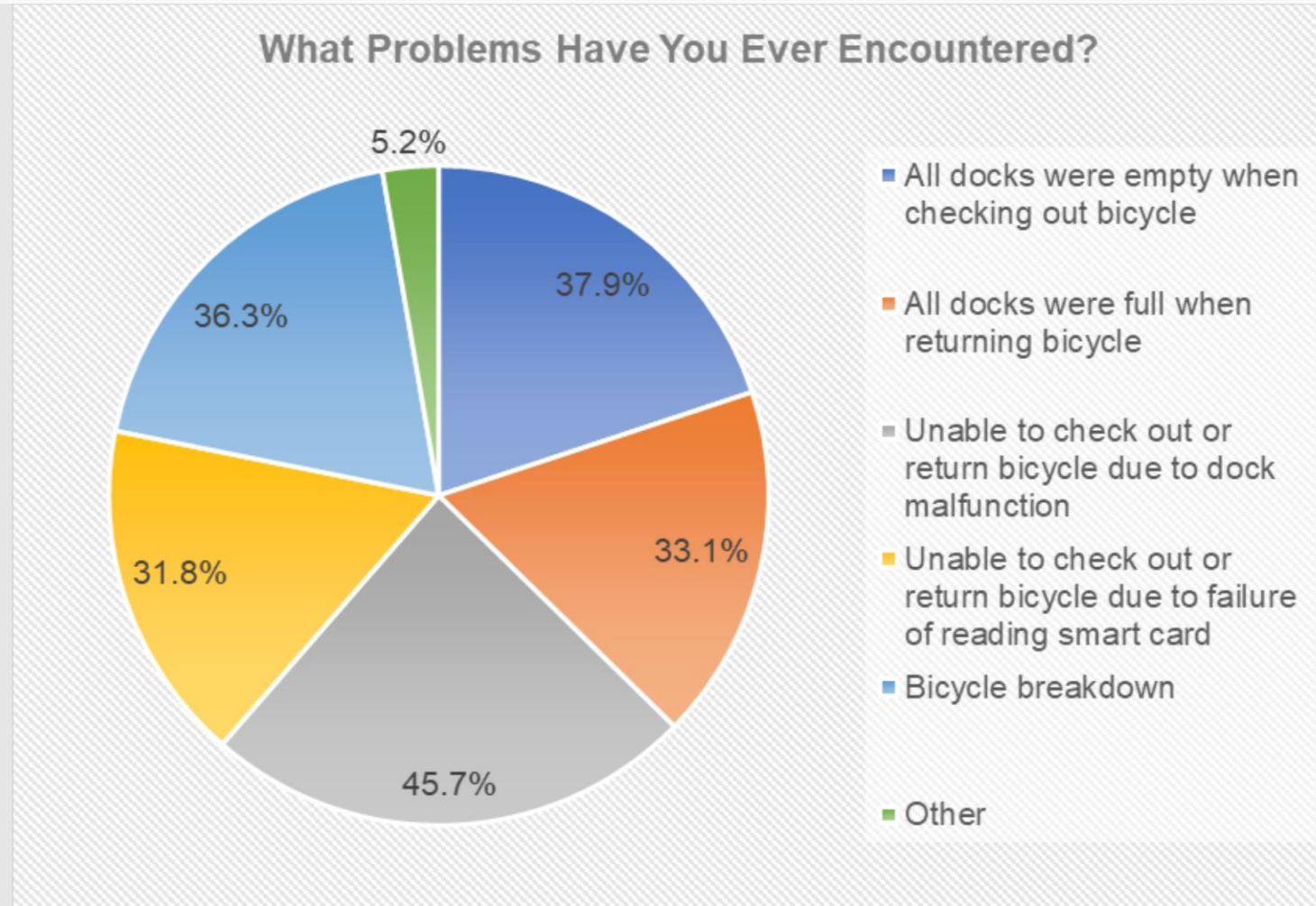


Top 10 Countries in Number of Docked Bike Sharing System



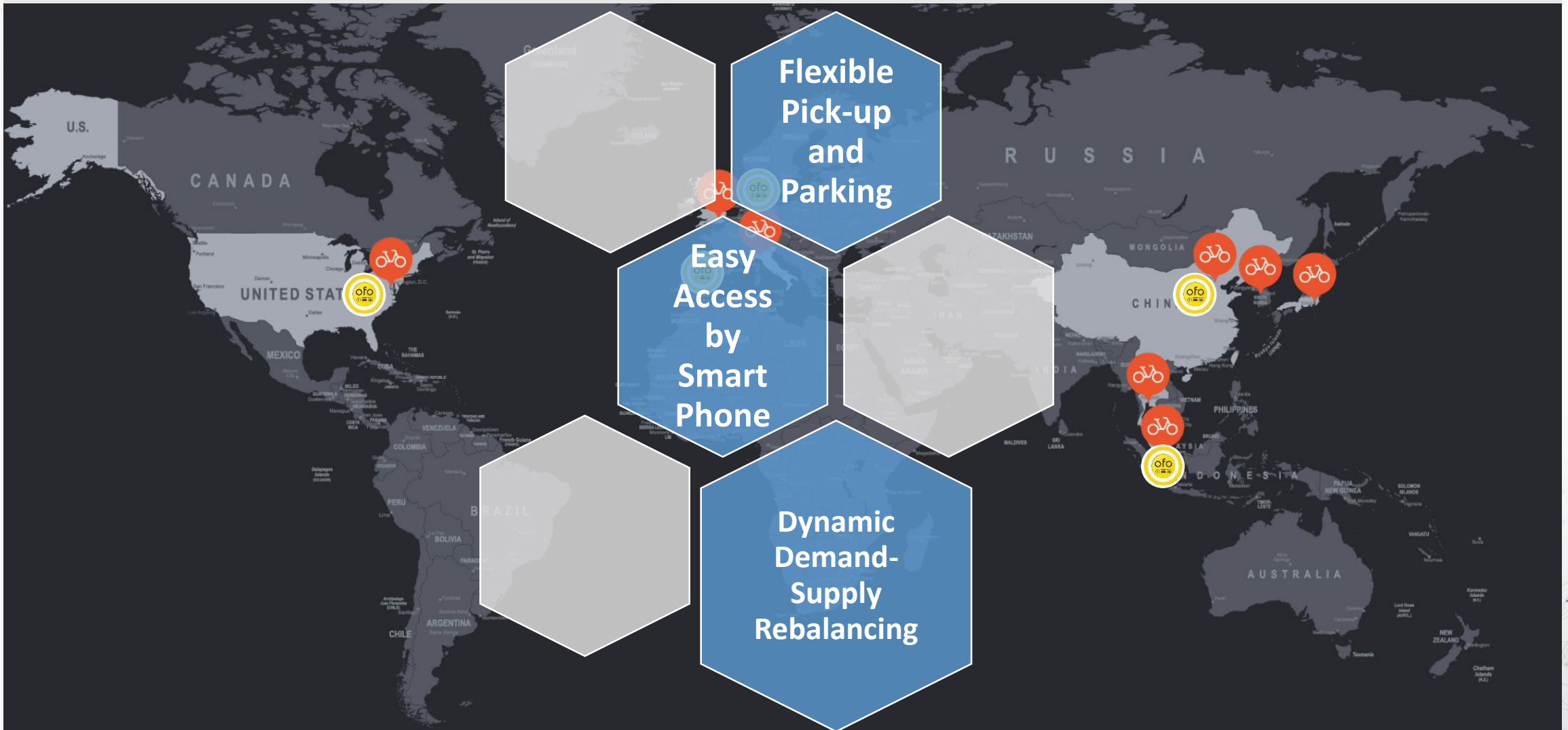
Docked PBS is widely used but has inherent limitations

The survey of 1,000 users of docked PBS in Changzhi City, China shows:



Dockless PBS relaxes limitations through technological innovations

In 2017, dockless PBS served **227 million users** globally



PBS tackles urban mobility challenges

- ❖ Dockless PBS presents a promising solution to link the **last-mile** of urban mobility.
- ❖ **Data** generated by dockless PBS unlocks innovative approaches to understand urban NMT demand thus to improve NMT environment.



But also brings its own challenges



- ❖ Oversupply
- ❖ Random parking
- ❖ Disappearing operators

❖ Growing use means adjustment required for NMT infrastructure →



PBS – Unlock new information and better insights to understand NMT demand

Data collected from **one** shared bike

- ❖ Trouble-free operation for 365 days
- ❖ Unlocked by 1,975 users
- ❖ 2,021 complete trips
- ❖ Traveling a total distance of 4,850 km



PBS – Unlock new information and better insights to understand NMT demand

What if we analyze data collected from millions of operating shared bikes?

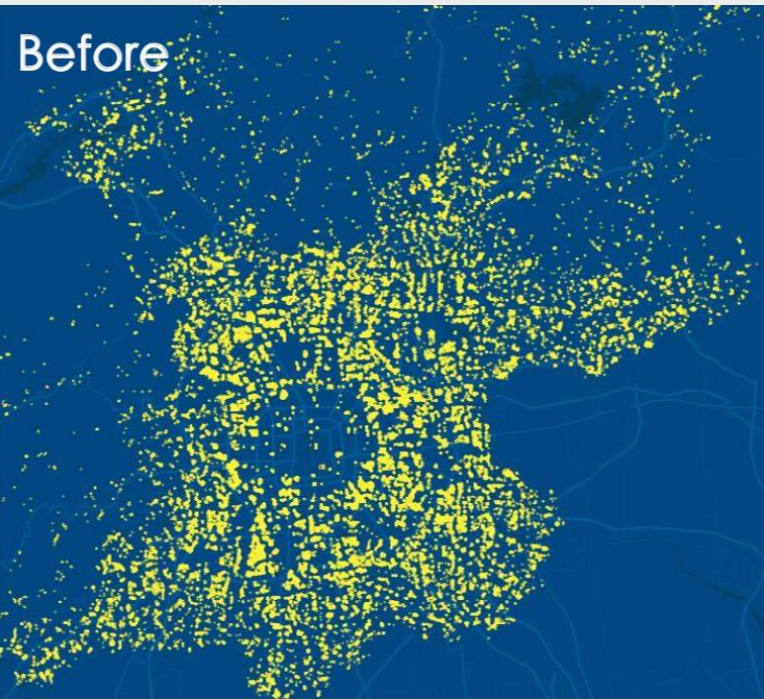
Coverage of 85% trips



Shenzhen Nanshan Station

“PBS + Public Transit” eliminates the blind area of public transport service

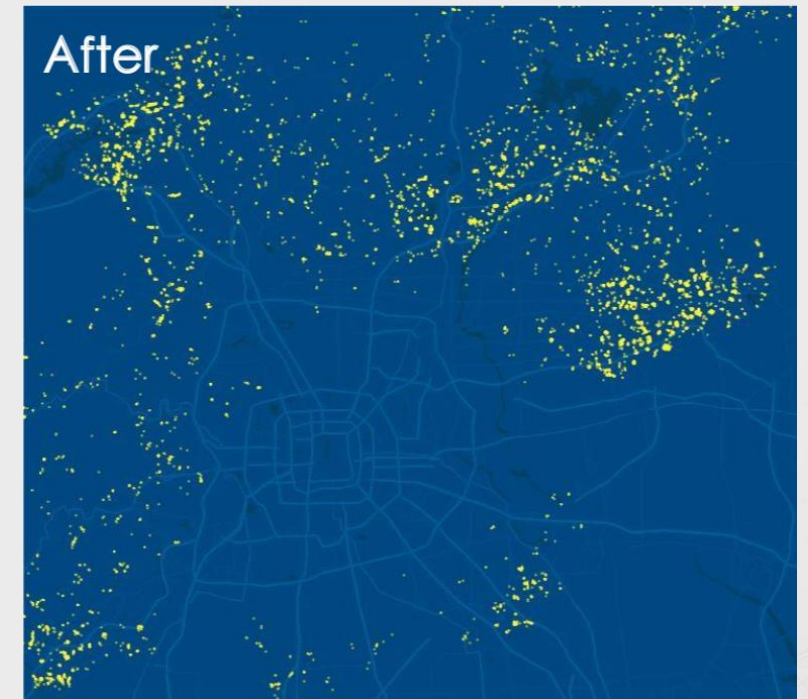
In Beijing, **92.7%** population are covered with public transit service within biking distance



Yellow areas are not covered by public transit service within walking distance, mainly outside the 4th ring road



Orange areas are increased service coverage of public transit accessible within biking distance



Remaining yellow areas are not covered by public transit service within biking distance.



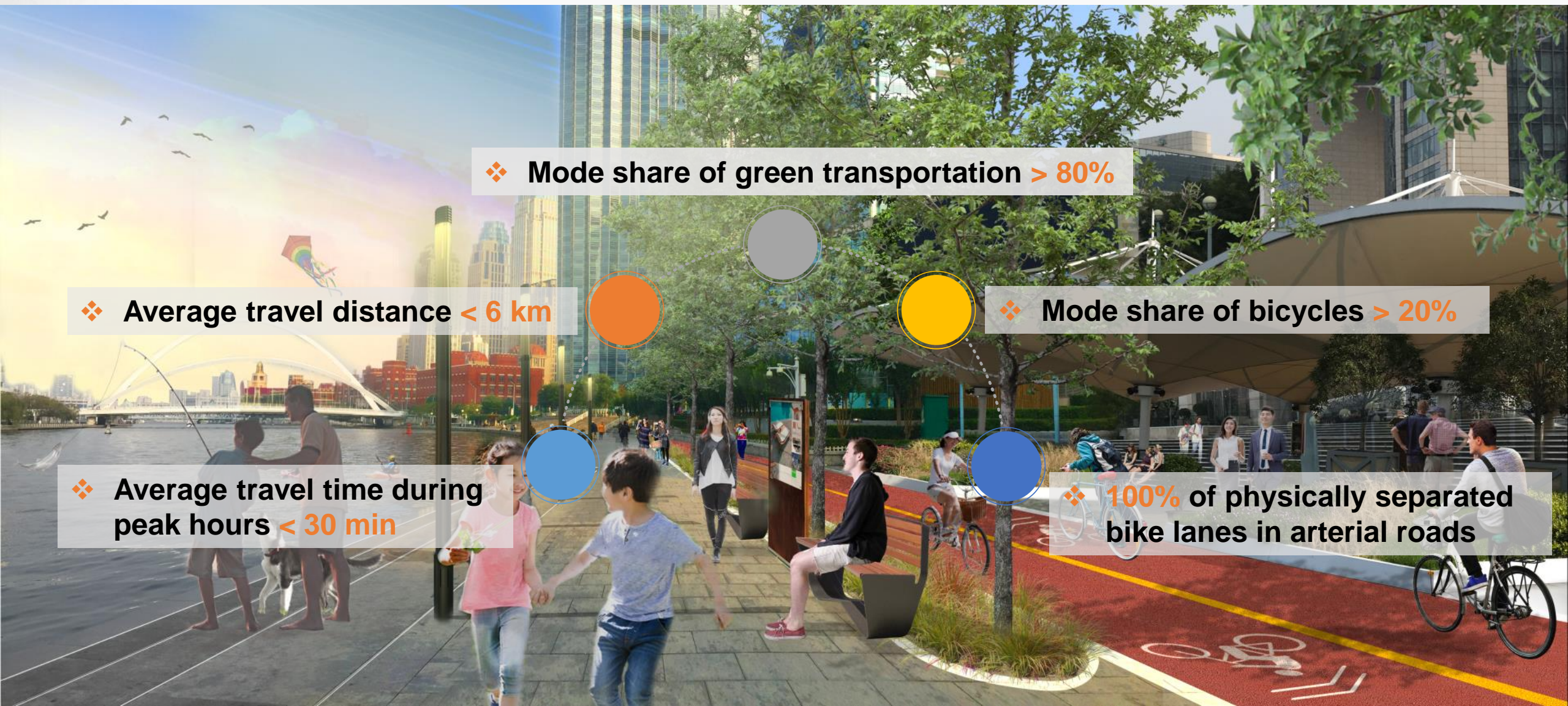
However, car-oriented urban planning and traffic design has impeded the development NMT



02

**Innovative Approach to Improve NMT Environment:
On-going Pilot in Tianjin, China**

Pilot: Tianjin Green Transport Development Strategy



❖ Mode share of green transportation > 80%

❖ Average travel distance < 6 km

❖ Mode share of bicycles > 20%

❖ Average travel time during peak hours < 30 min

❖ 100% of physically separated bike lanes in arterial roads

Pilot: Tianjin Green Transport Development Strategy



How to implement green transport strategy?



Institution arrangement for innovation

Step 0: Institutional arrangement

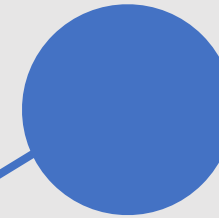
Tianjin City

- Department of Transport
- Commission of Housing and Urban-rural Development
- Traffic Policy Department
- Citizens (public consultation)



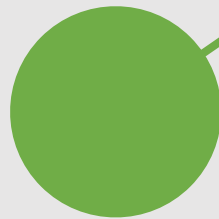
World Bank

- Tianjin Urban Transport Improvement Project
- Data Collaborative Initiative



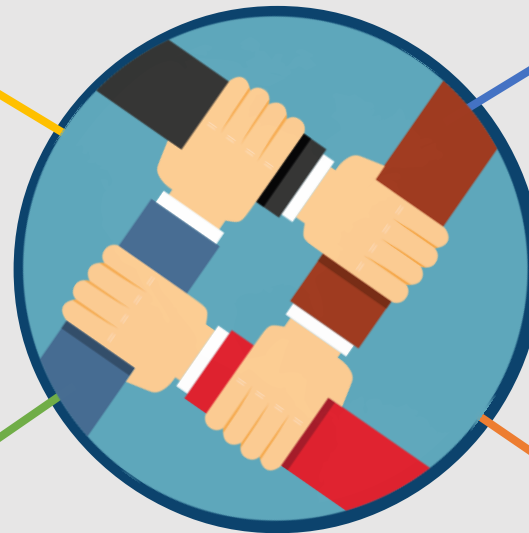
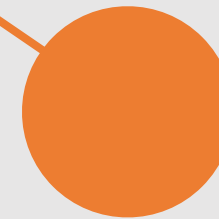
Planning Institute and Consulting Firm

- Technical design and development



Mobike

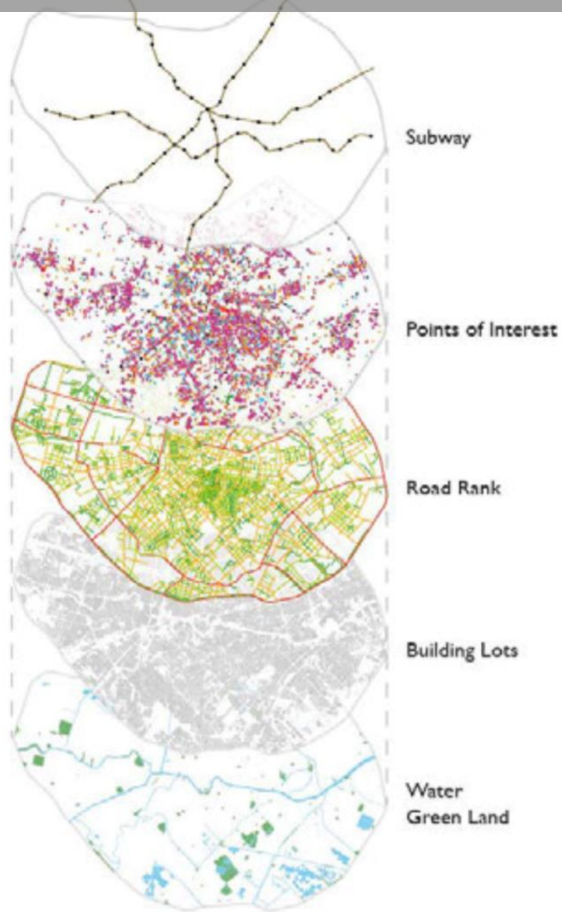
- Operational data of shared bikes
- Data analytics support



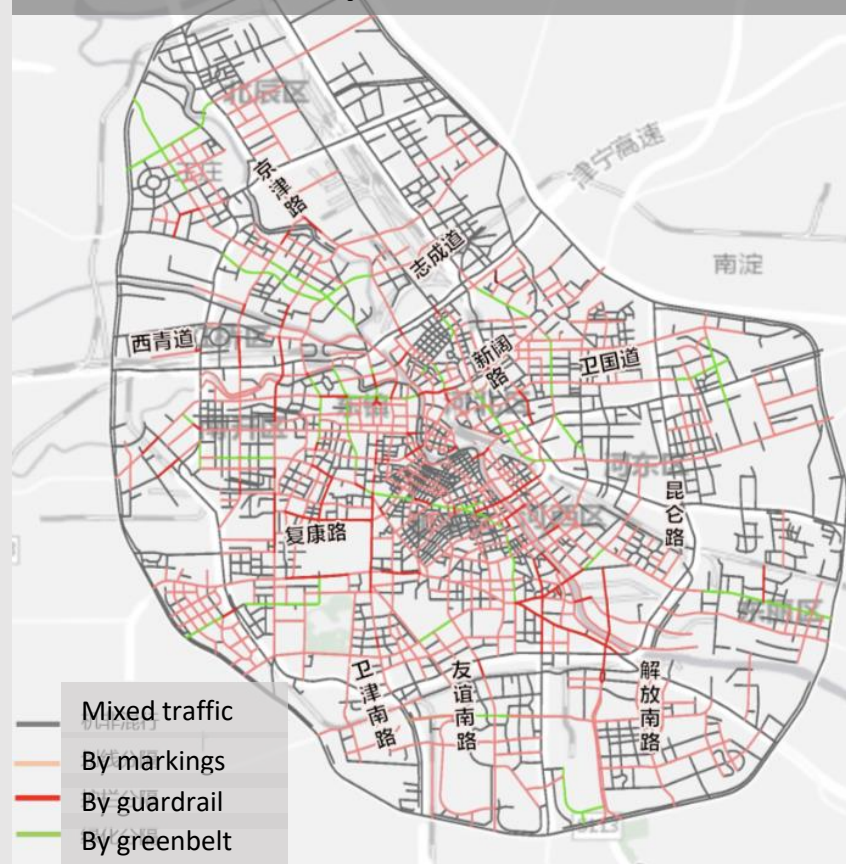
Better integrated data for smarter NMT planning and decision making

Step 1: Database

Multi-layers Infrastructure Data



Apply computer vision and AI to identify bike lane separation facilities

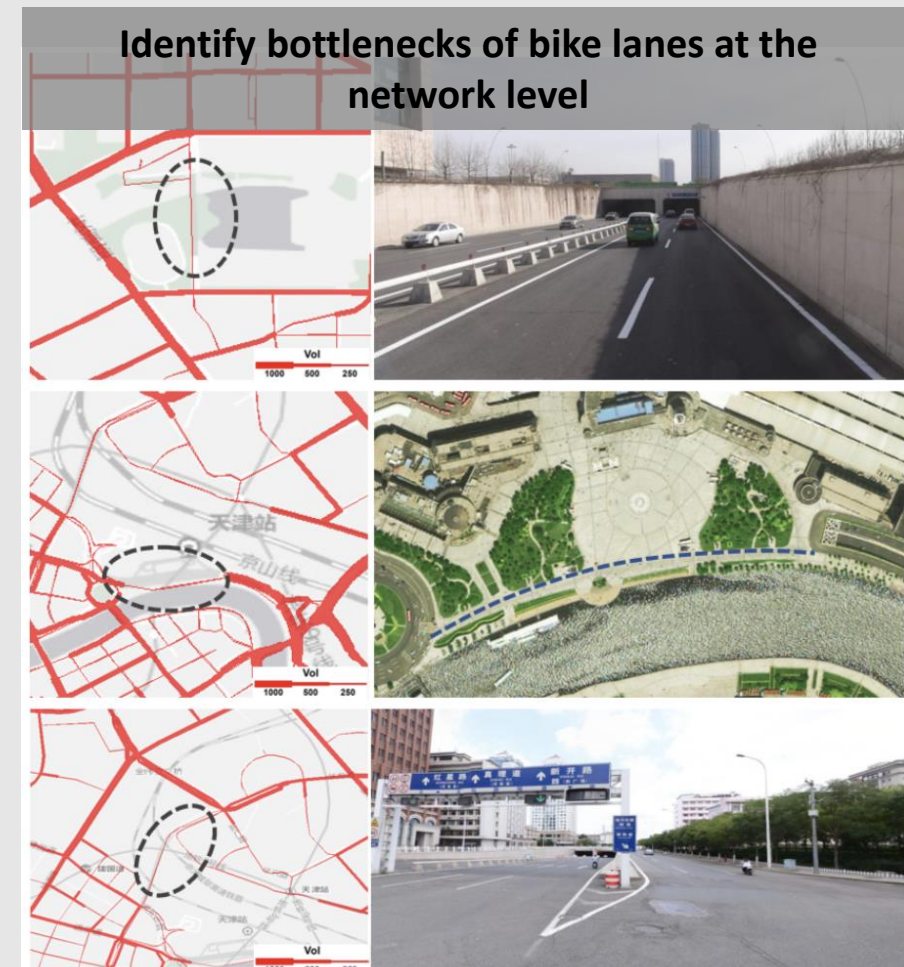
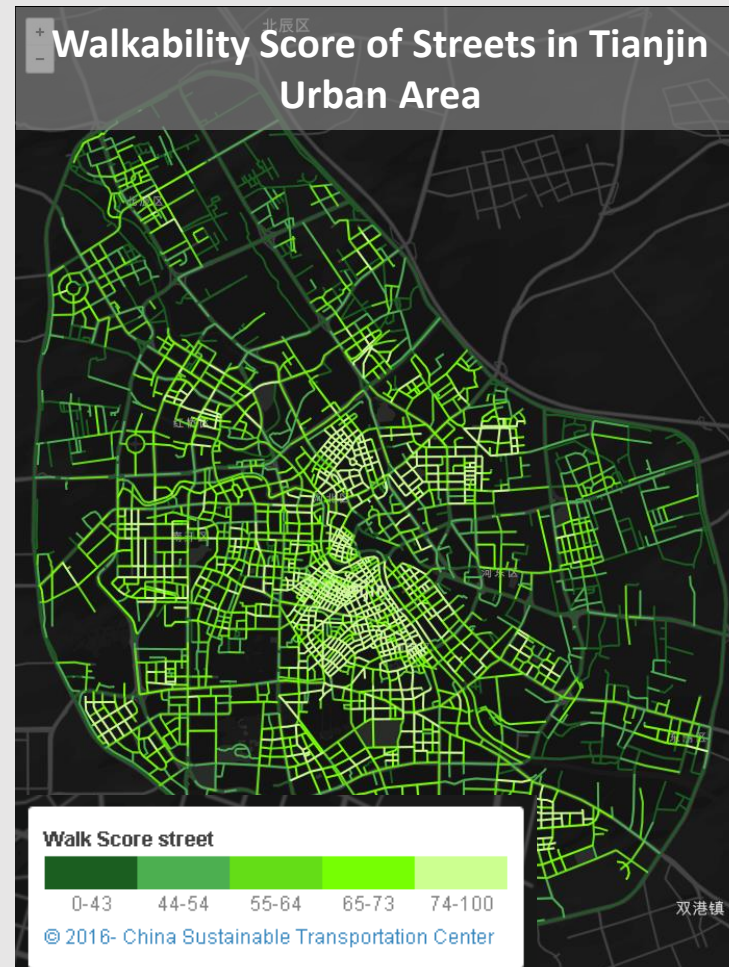
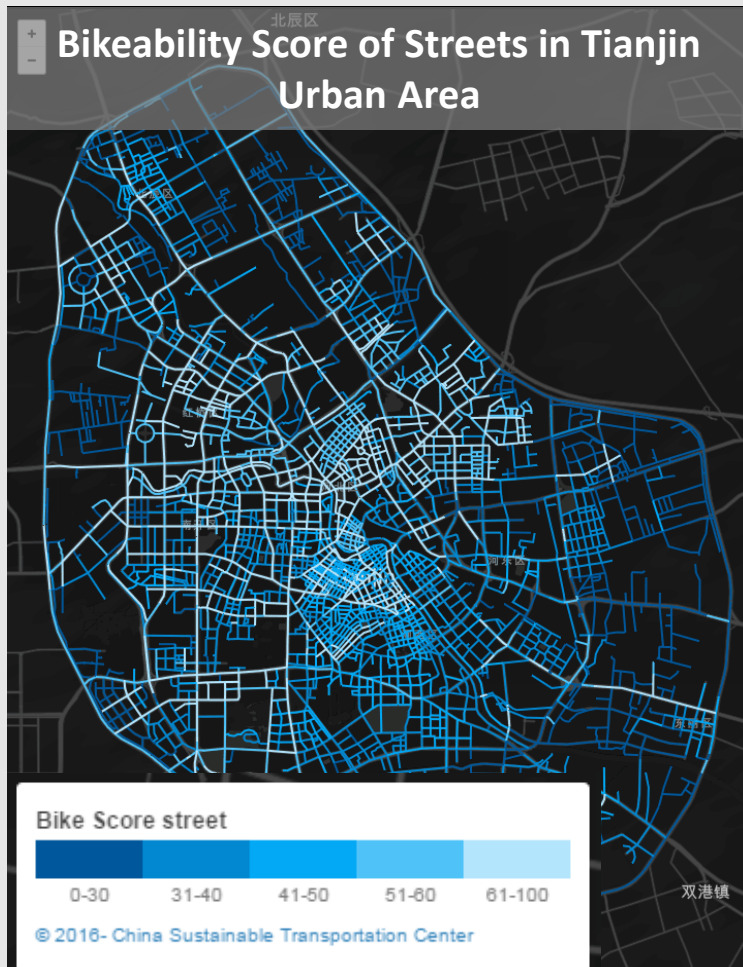


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Spatiotemporal Distribution of PBS
Traffic Volume

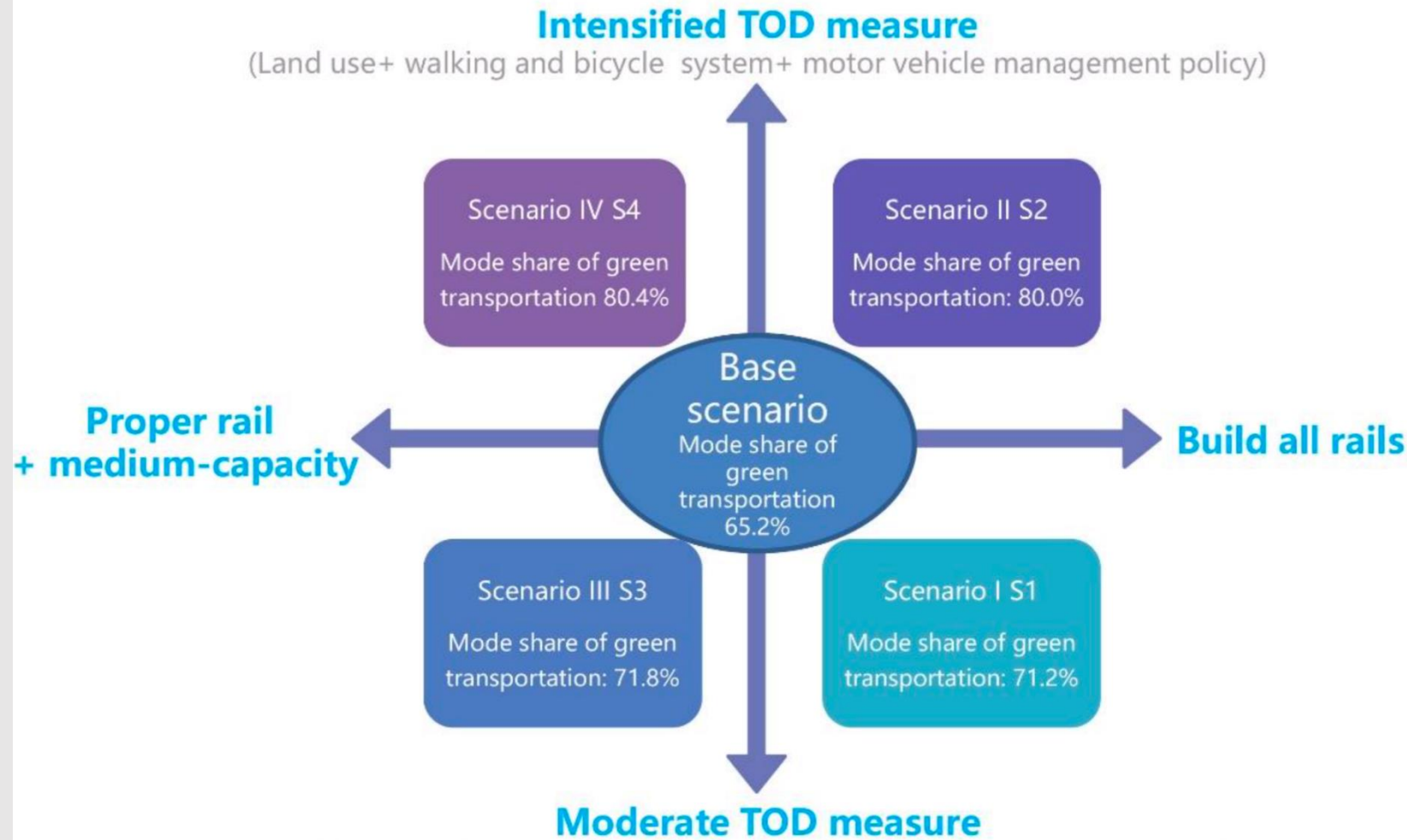
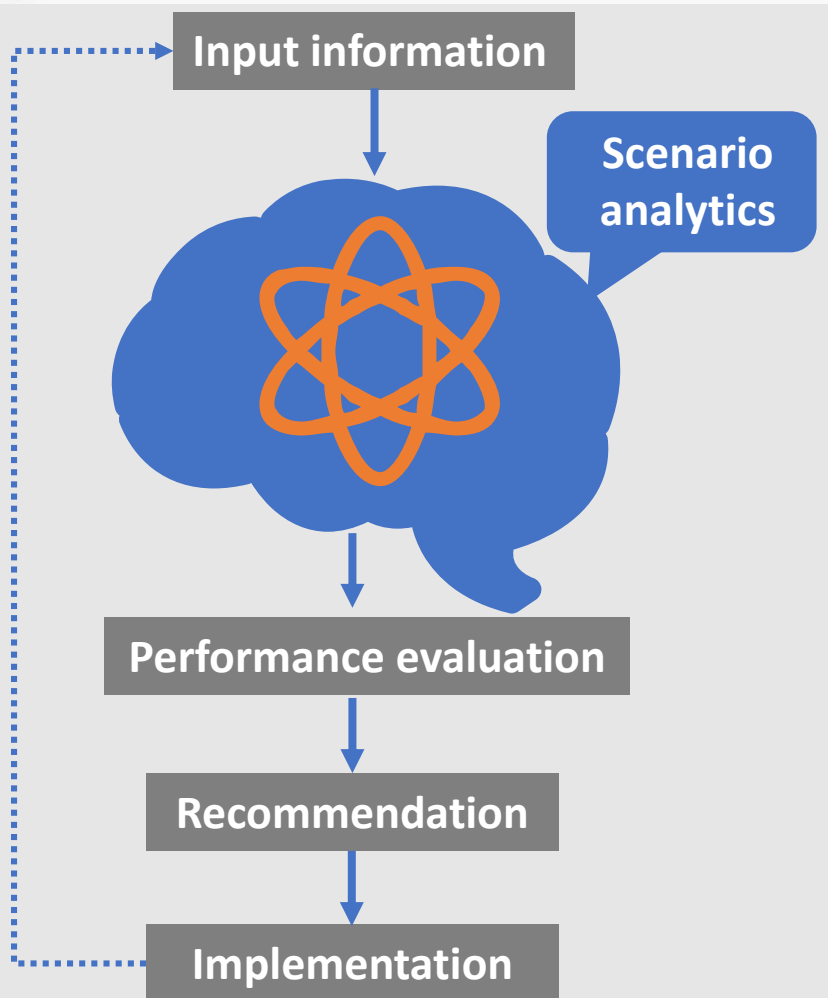
AI algorithms diagnose NMT environment at a network level

Step 2: Modelbase



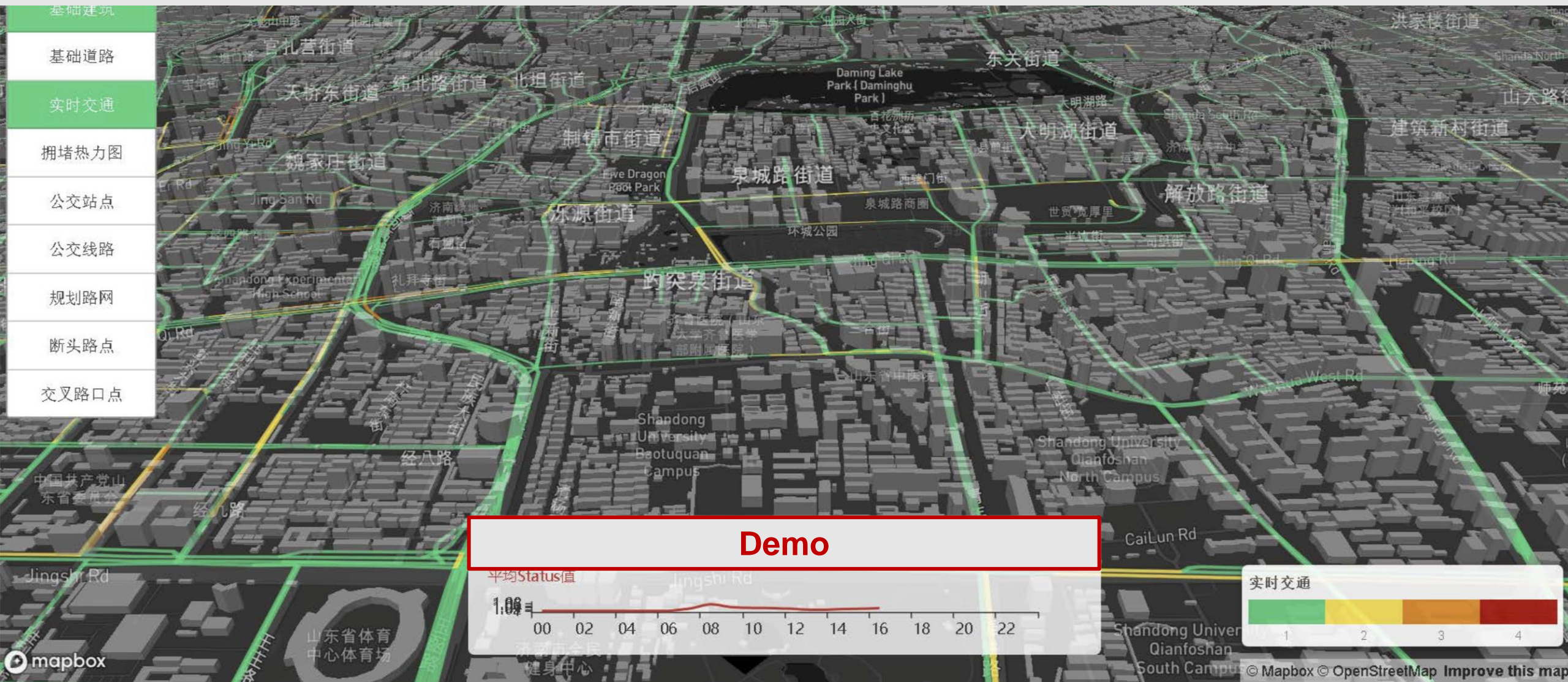
Data-informed decisions dynamically improve NMT environment

Step 3: Knowledgebase



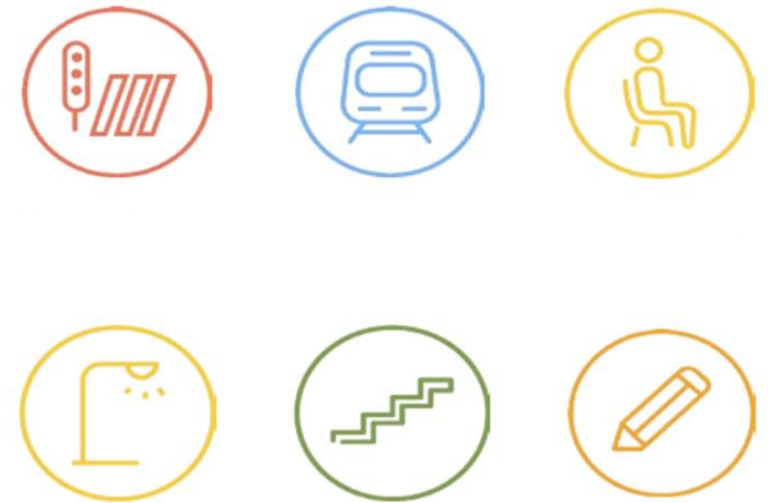
Web-based toolkit designed for quick replication

Step 4: WebGIS based visualization



PinStreet: Voice of every urban transport participant matters

Step 5: Public engagement - Pin any street problem on the map



The background of the slide features a complex network diagram. It consists of numerous small, dark grey circular nodes connected by thin, light grey lines. The nodes are arranged in a way that suggests a spherical or globe-like structure, with lines crisscrossing across the surface. The overall aesthetic is clean, modern, and technical.

03

Conclusions

- 
- ❖ Maximizing data collaboration** for green transport strategy implementation
- ❖ Making data-informed decisions** for urban and transport planning
- ❖ Adjusting institution arrangement** for innovation
- THE GREEN LOOP
A PUBLIC SPACE & REVITALISATION STRATEGY
FOR THE BEIJING ROAD DISTRICT

The background features a complex network of thin grey lines connecting various sized grey dots, creating a web-like pattern that is denser on the left and right sides and sparser in the center. The dots vary in size and opacity, with some appearing as solid black and others as semi-transparent grey.

THANK YOU
