Digital map content, navigation, LBS solutions and traffic big data applications

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AMAP

Standard Configuration for Users

MAU (Monthly Active Users) 400+ Millions

Standard Configuration for Automobiles

IoV (Internet of Vehicles) online ratio >90%

Standard Configuration for Transport Industry

Cooperation with traffic control departments in 150+ cities
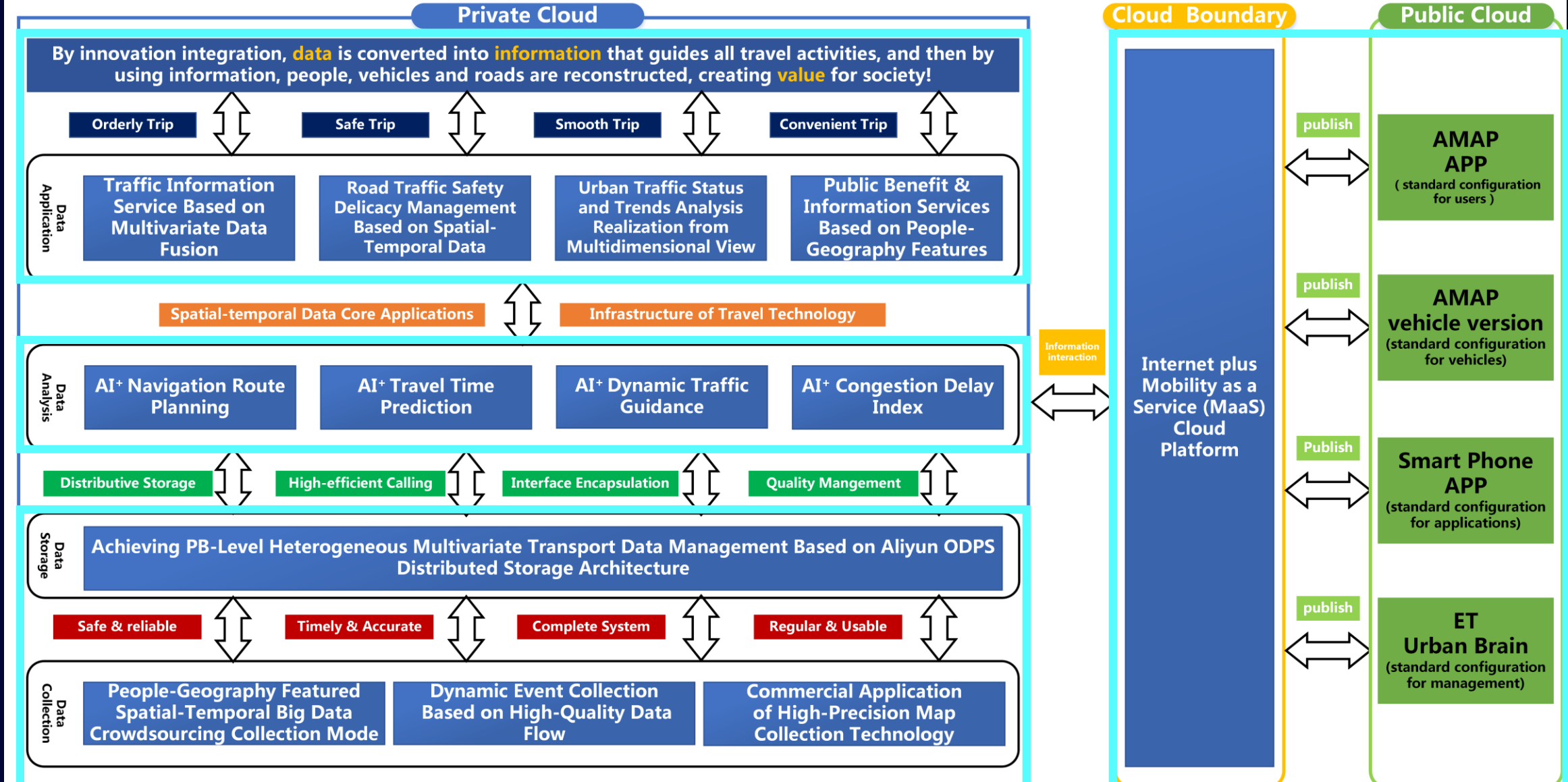
Standard Configuration for Scenic Areas

Cooperation with Ministry of Culture and Tourism, covering all 5A and >70% 4A scenic areas

Standard Configuration for Mobile Applications

Serving 300+ thousands mobile applications, covering >80% mainstream applications

Smart thinking for good journey

Spatial-Temporal Data Collection, Storage, Analysis and Application System Based on People-Geography Features

Private Cloud

By innovation integration, **data** is converted into **information** that guides all travel activities, and then by using information, people, vehicles and roads are reconstructed, creating **value** for society!

| Orderly Trip | Safe Trip | Smooth Trip | Convenient Trip |

Data Application

| Traffic Information Service Based on Multivariate Data Fusion | Road Traffic Safety Delicacy Management Based on Spatial-Temporal Data | Urban Traffic Status and Trends Analysis Realization from Multidimensional View | Public Benefit & Information Services Based on People-Geography Features |

Spatial-temporal Data Core Applications   Infrastructure of Travel Technology

Data Analysis

| AI$^+$ Navigation Route Planning | AI$^+$ Travel Time Prediction | AI$^+$ Dynamic Traffic Guidance | AI$^+$ Congestion Delay Index |

Distributive Storage   High-efficient Calling   Interface Encapsulation   Quality Mangement

Data Storage

Achieving PB-Level Heterogeneous Multivariate Transport Data Management Based on Aliyun ODPS Distributed Storage Architecture

Safe & reliable   Timely & Accurate   Complete System   Regular & Usable

Data Collection

| People-Geography Featured Spatial-Temporal Big Data Crowdsourcing Collection Mode | Dynamic Event Collection Based on High-Quality Data Flow | Commercial Application of High-Precision Map Collection Technology |

Cloud Boundary

Information interaction

Internet plus Mobility as a Service (MaaS) Cloud Platform

Public Cloud

publish

AMAP APP
(standard configuration for users)

publish

AMAP vehicle version
(standard configuration for vehicles)

Publish

Smart Phone APP
(standard configuration for applications)

publish

ET Urban Brain
(standard configuration for management)

Management as a service

Left Brain（TO G）

Urban traffic governance solution

Road traffic safety   City feature analysis

Road traffic guidance   Public transport
                          network optimization

Right Brain（TO C）

Urban smart travel solution

Risky road information   Real-time public transport
publish   information publish

Intelligent route   Aid realizing
guidance publish   defensive driving

Management → [Goal / Closed Loop] → Service

Traveler intelligent scheduling and dispatch combining left brain with right brain
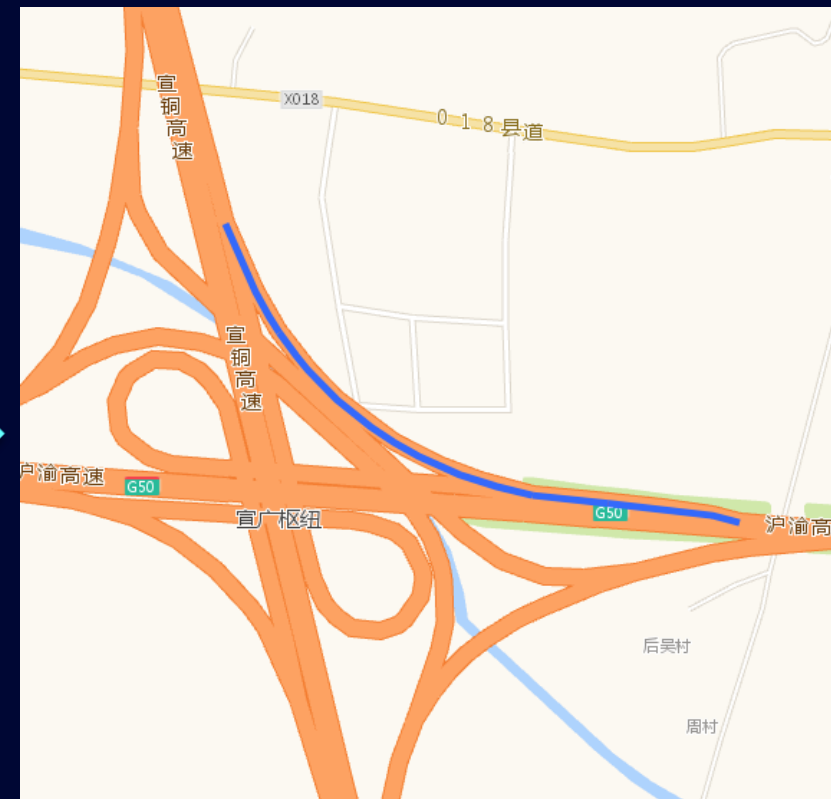

2017、2018宣广枢纽通行速度(km/h)对比 **Speed**
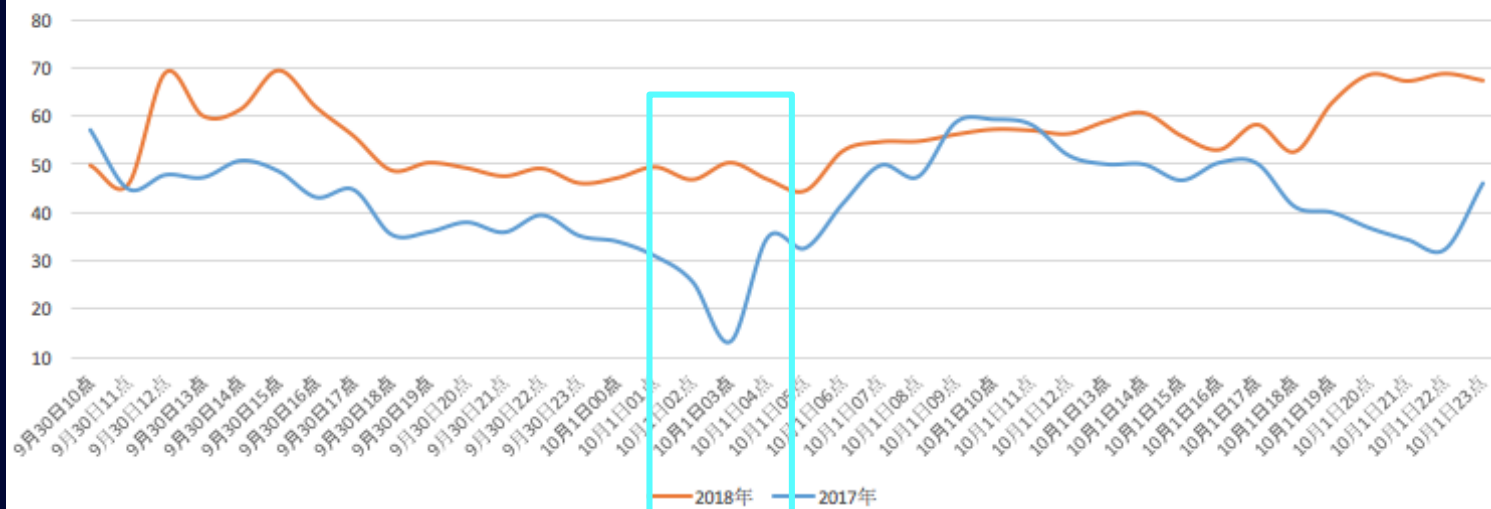
2017、2018宣广枢纽通行时间（s）对比 **Travel Time**
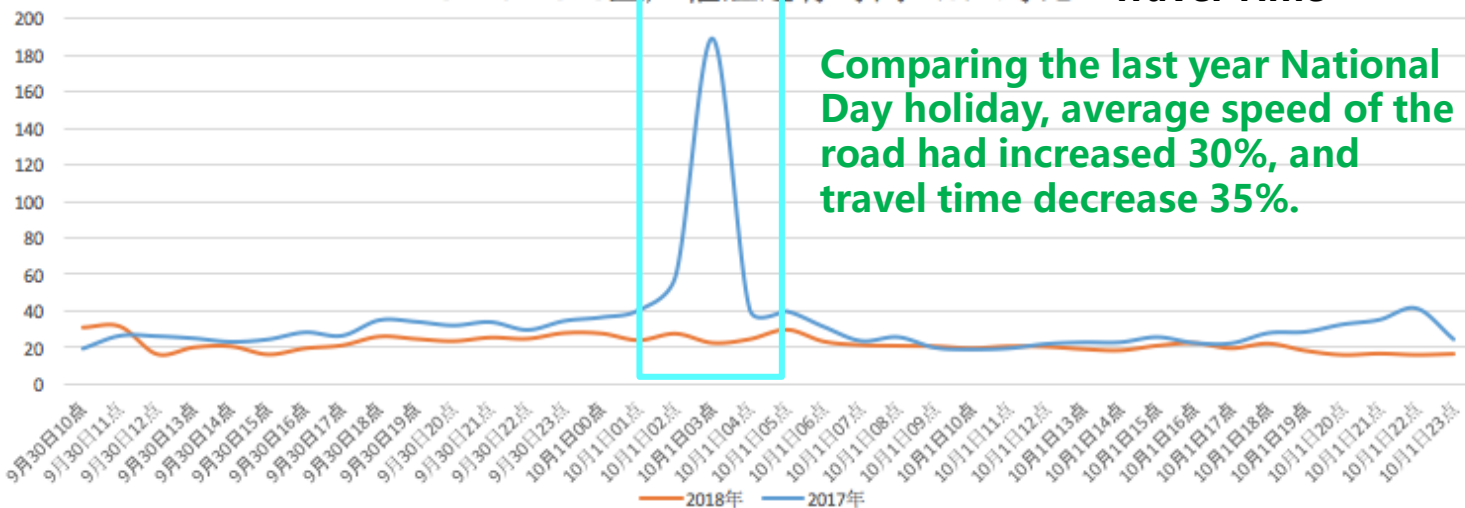
Comparing the last year National Day holiday, average speed of the road had increased 30%, and travel time decrease 35%.

Share Diseconomy: Impact of Ride-Sharing Companies' Subsidy War on Urban Congestion

From 21st, Mar to 5th, Apr 2018, a subsidy war was started in shanghai by two ridesharing companies, forming a natural experiment on how subsidy war would impact urban congestion. Data from 99 major cities covering 72 days is carefully examined.
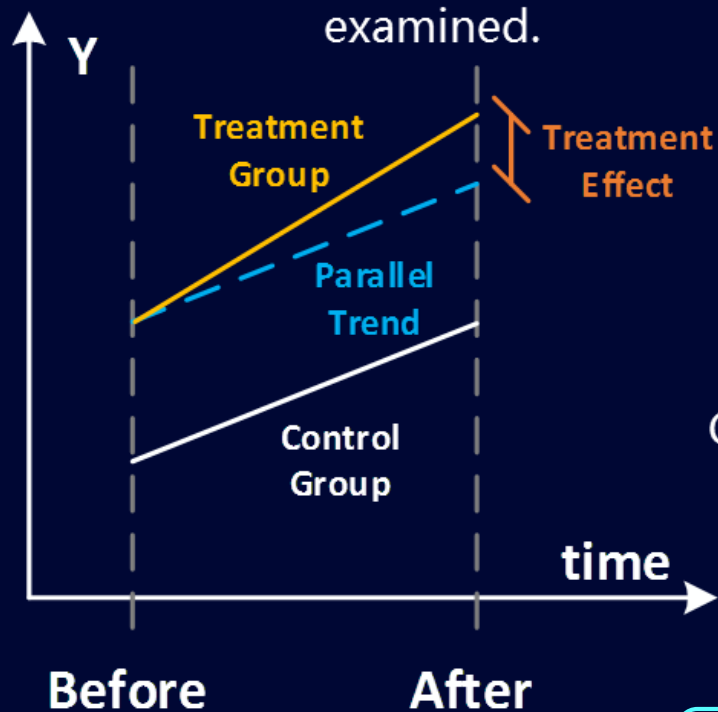
Dependent Variable	Independent Variables	Control Variables
Congestion Delay Index	Whether is in Subsidy War	Weather, Population, Car Ownership, GDP and so on

Congestion Delay Index

$$CDI = \frac{V_f}{V_c} = \frac{T_c}{T_f}$$

Models	CDI Changes	Equivalent Changes	
		Speed	Time
DID	0.077	-4.40%	+4.61%
PSM-DID	0.075	-5.14%	+5.53%
DDD	0.068	-3.51%	+3.68%

Y

Treatment Group

Treatment Effect

Parallel Trend

Control Group

time

Before   **After**

DID Schematic Diagram

Result shows that subsidy war intensified urban congestion status, quantifying as approximately 4% time growth.

This article will be presented at TSTE 2018 , an international academic conference.

The effect of limitation policies comparison in some cities in 2017

The comparison between before and after the restriction on the digit of license plate numbers

Congestion delay index in peak hours

	Xian	Chengdu	Shijiazhuang	Tangshan	Luoyang
decrease	13.1%	0.9%	6.3%	6.7%	4.2%
before	2.00	1.82	1.78	1.84	1.90
after	1.74	1.81	1.67	1.72	1.82
restricted time period	11.20-12.31	12.18-31	10.18-12.31	11.1-12.31	12.18-12.31

The comparison between before and after the restriction of odd-and-even number limitation policies

before restriction
after restriction

Congestion delay index in peak hours

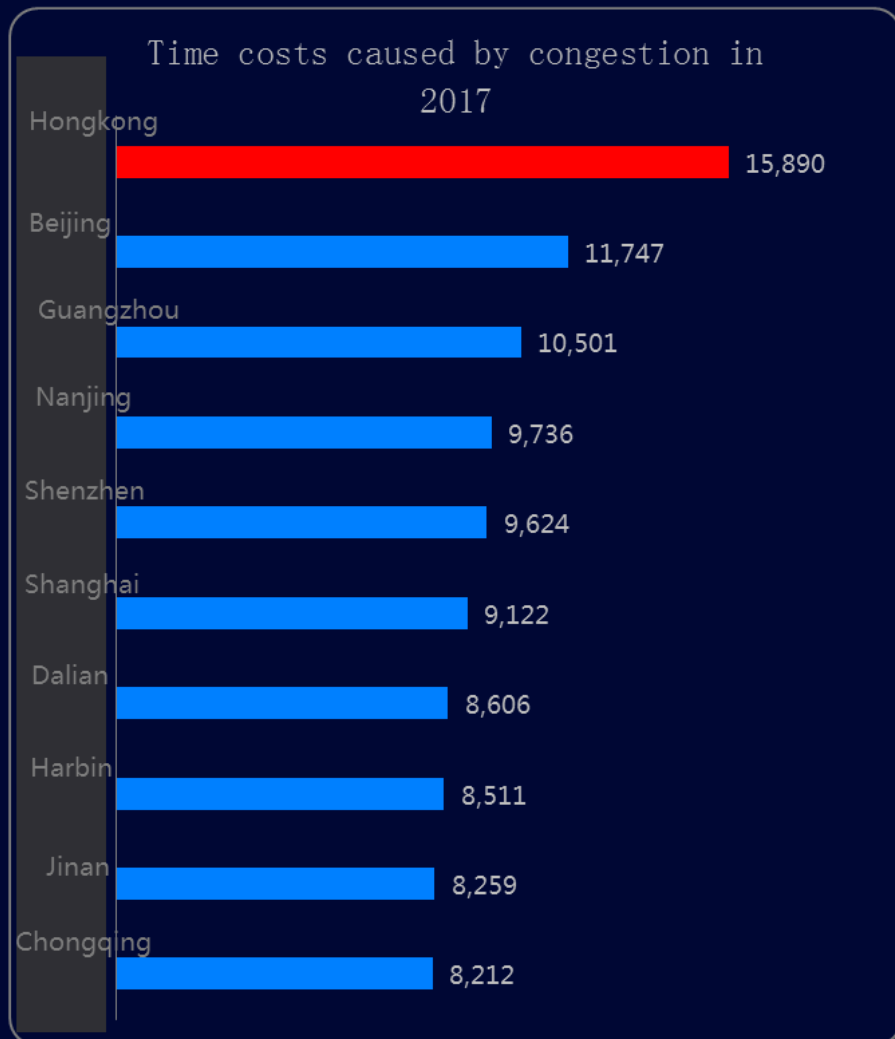|	Tangshan	Zhengzhou	Yinchuan	Dalian	Xiamen	Taiyuan
decrease	18.6%	16.2%	10.2%	23.7%	20.4%	22.3%
before	1.84	1.82	1.90	1.86	1.52	1.79
after	1.50	1.53	1.71	1.42	1.21	1.39
restricted time period	1.3-6 10.12-13 10.20,24-26	12.4-31	12.9-31	6.26-30	8.31 9.1-6	1.4-6 6.6-8 9.22 10.19-20 10.24-27 11.8-9

In terms of the traffic restrictions based on the last digit of license plate numbers, Xian held the best effect, Chengdu was the least.
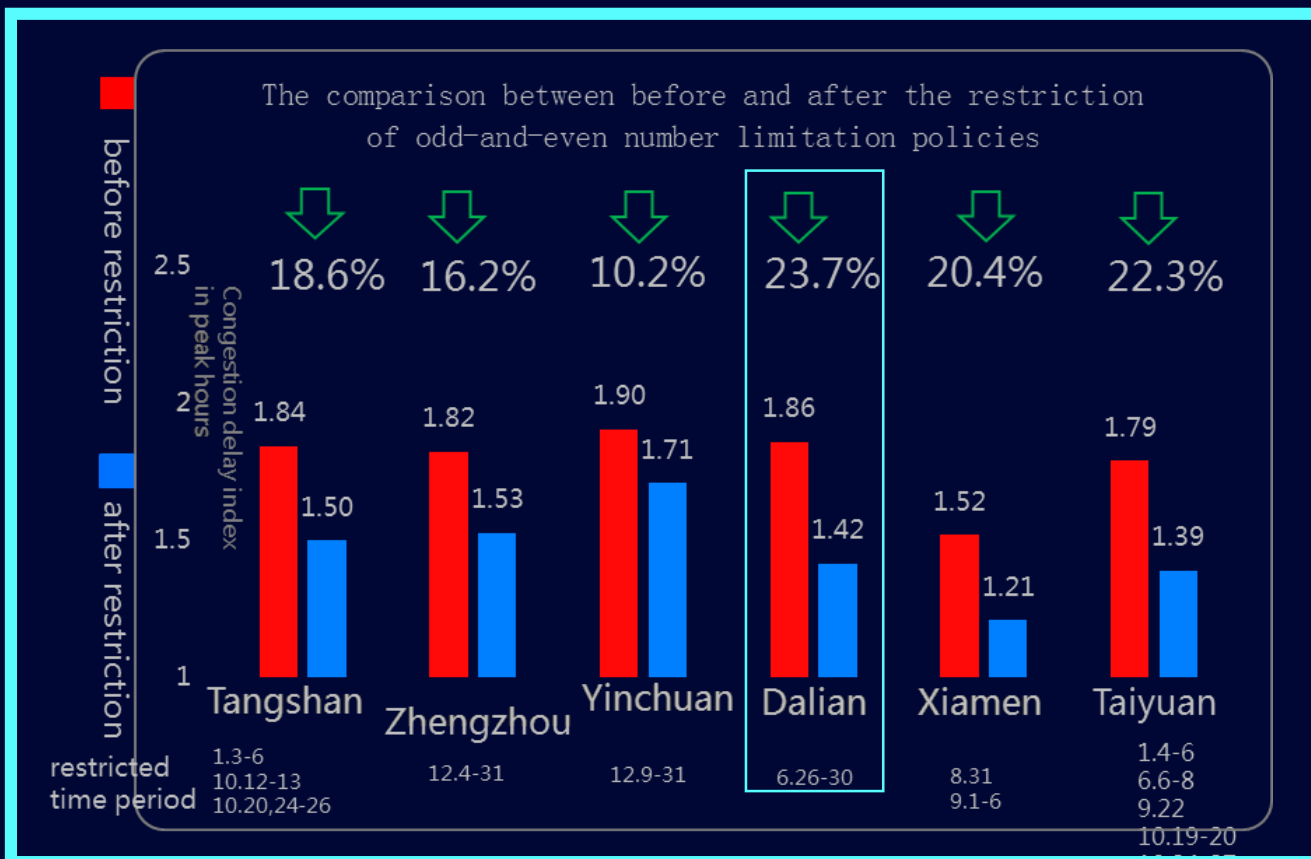
The odd-and-even number limitation policies for Dalian shows the most evident and largest decrease on congestion, but the effect for Yinchuan was quite weak

The city with the highest time cost in 2017- Hongkong

➤ **The time cost due to congestion was as high as 15890 yuan in Hongkong in 2017**

Time costs caused by congestion in 2017

Hongkong 15,890
Beijing 11,747
Guangzhou 10,501
Nanjing 9,736
Shenzhen 9,624
Shanghai 9,122
Dalian 8,606
Harbin 8,511
Jinan 8,259
Chongqing 8,212

The highest time costs in Hongkong was September.

yuan

¥1,500
¥1,000
¥500
¥0

1,411

1 2 3 4 5 6 7 8 9 10 11 12
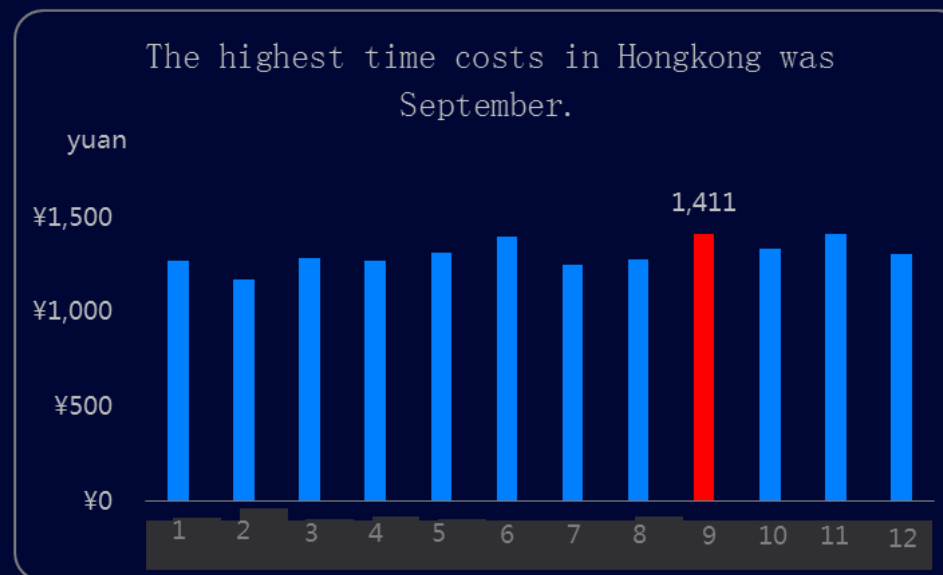
Note: Taking Beijing as an example, during peak hours, for every hour spending on journey, about 30 minutes was wasted on congestion. The average monthly salary for Beijing was 7706 yuan (According to the latest published figure from certain government department), and after converting the figure to the unit of hour, the result was 43.78 yuan (7702÷22÷8,22 means working days for every month and 8 means 8 working hours per day). So, the time costs caused by congestion was actually 21.89yuan in Beijing in 2017.

Cross-City Commuting

➢ **Cross-city Commuting Distribution of working and living: Most cross-city commuters are living in the east part of Beijing (Yanjiao, Langfang) and working in the areas of core area.**

Heat-map for Beijing commuters going to Beijing outskirts

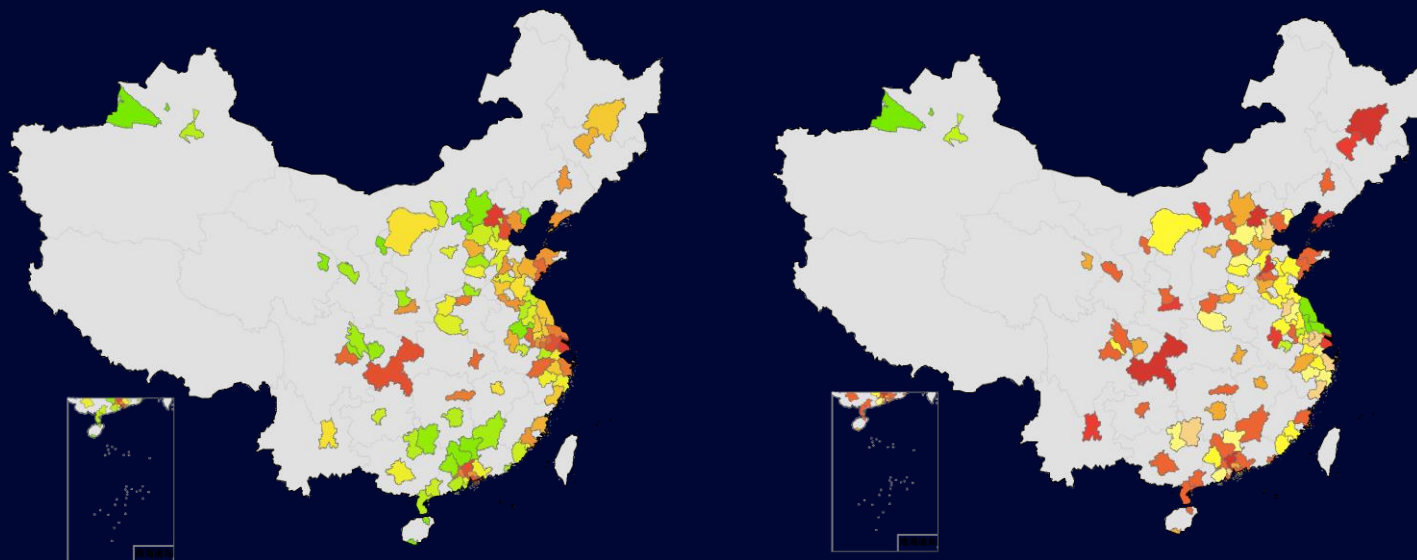Heat-map for commuters going from Beijing outskirts to inner Beijing

Yellow point: Origin / **Red point : Destination**

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The correlation between urban congestion and GDP is weak.
Well developed region Yangtze River Delta has the lowest congestion degree.

2017Q3 hundred cities GDP

2017Q3 hundred cities congestion heat map

comparing Cheng-Yu Area, Guangdong-Hongkong-Macao Greater Bay Area, Beijing-Tianjin-Hebei Region and Yangtze River Delta, the four major economic zones in China:

➢ Cheng-Yu Area has the lowest GDP but suffers from congestion the most.
➢ In contrast, with relevantly better developed economy, the congestion degree in Yangtze River Delta is lower.

Congestion Delay Index in Peak Hour (Q3) & GDP(1st half year of 2017   10⁸ Yuan

2.00				6000
1.50				4000
				2000
1.00				0
Cheng Yu Area	Greater Bay Area	Beijing-Tianjin-Hebei Region	Pearl River Delta (PRD)	

Index   GDP   GDP is the average in each region in the first half year of 2017
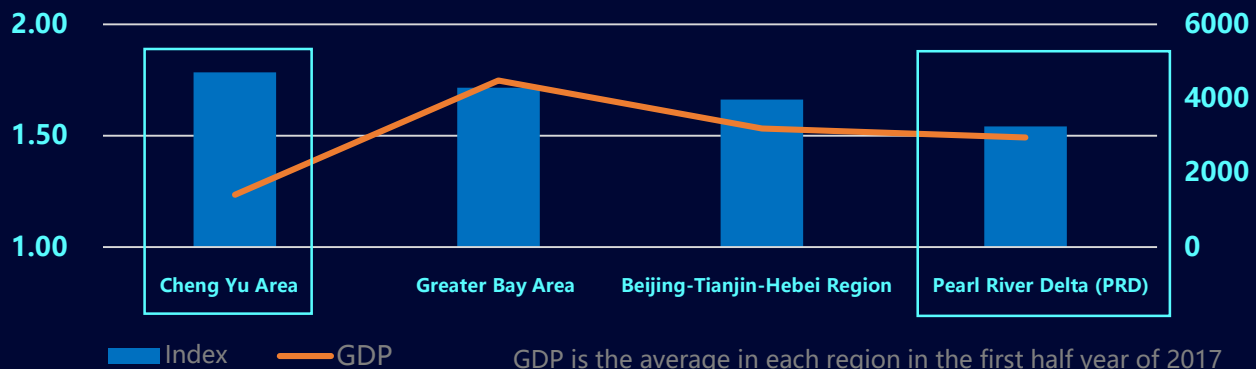
Rank of cities having optimal GDP and urban congestion degree

Ranking	City	Ranking	City
1	Hongkong	6	Hangzhou
2	Shenzhen	7	Tsingtao
3	Tianjin	8	Wuxi
4	Suzhou	9	Changsha
5	Wuhan	10	Ningbo

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Urban Traffic Analysis Report: Authoritative Information

http://report.amap.com/index.do

English Version

Joint Laboratory for Future Transport and Urban computing

未来交通与城市计算联合实验室
JOINT LABORATORY
FOR FUTURE TRANSPORT AND URBAN COMPUTING

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连接创新和应用

Integration of innovation and application

连接社区和人才

Integration of society and talent

连接现在和未来

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