

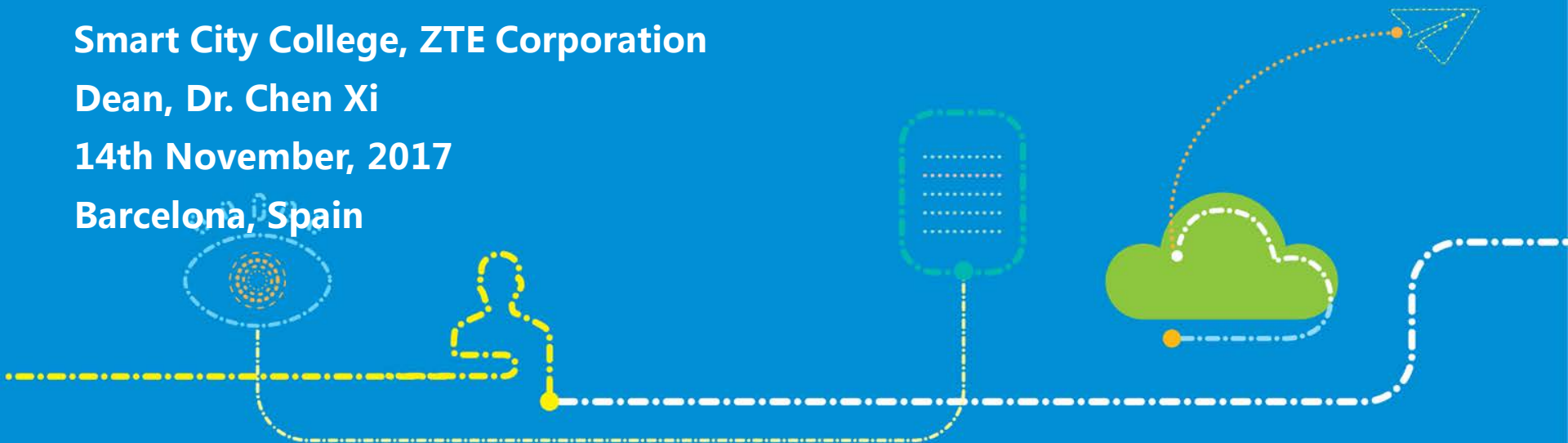
Top-level Design of Smart City: Urban Development and Regional Integration

Smart City College, ZTE Corporation

Dean, Dr. Chen Xi

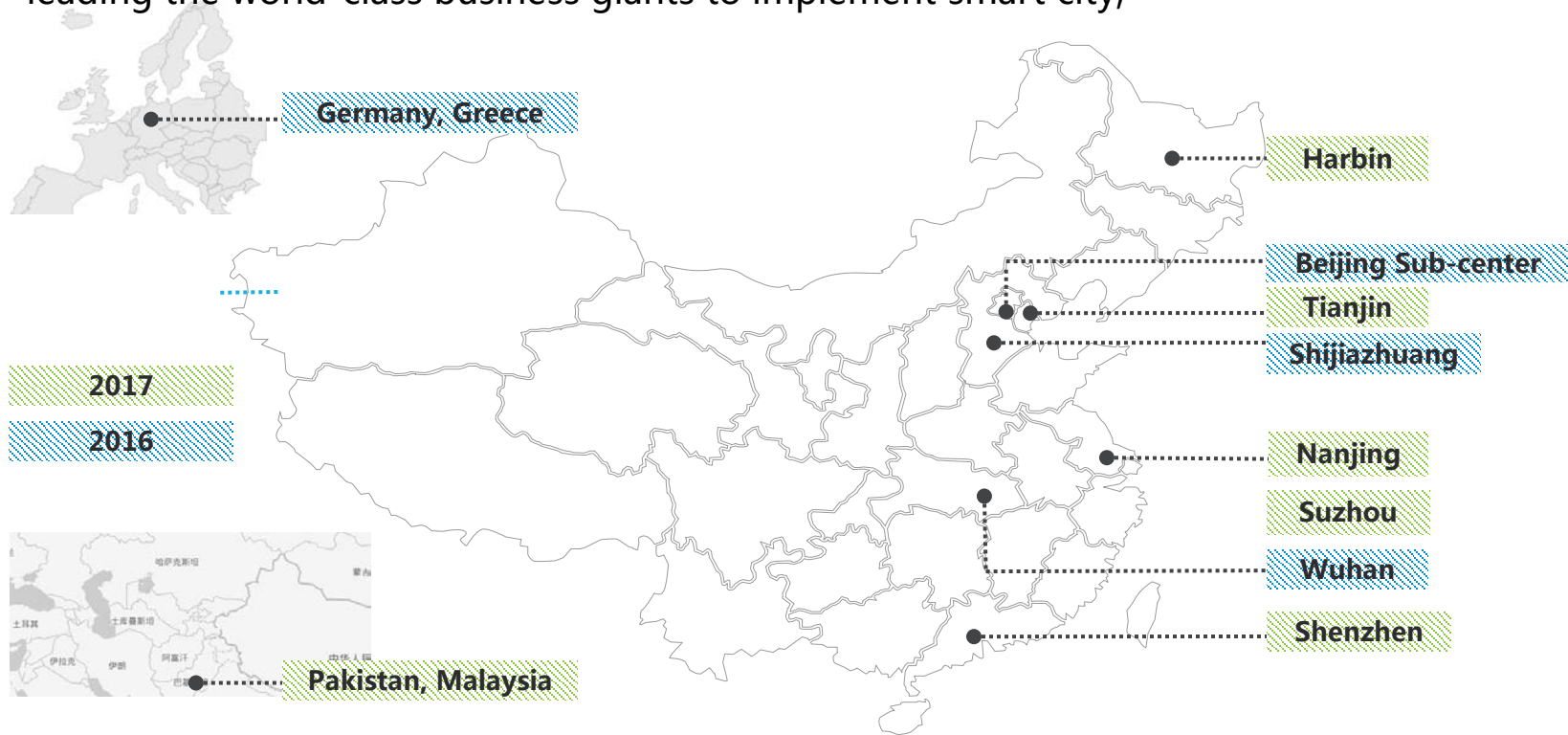
14th November, 2017

Barcelona, Spain



Global Top-level Design Cases

Top level design cases: 30+ worldwide;
leading the world-class business giants to implement smart city;



Why We Need Top-level Design

	Area (km ²)	Population(million)	GDP (billion dollar)
Beijing	1401	18.80	383
Tianjin	885	12.95	275
Shanghai	1563	21.30	427
Hangzhou	702	7	170
Nanjing	755	6.8	161
Guangzhou	1237	12	302
Shenzhen	900	12	300
Sum	7,000	90	2,000
	0.07% of Chinese territory	6.5% of Chinese population	17.5% of Chinese GDP)

Urbanization rate in China : **57.4%(2016)→70%(2030)**

Average Urbanization Rate (Top Seven Cities): 90%

Migration movement in China:

Predicted migration movement is emerging

First tier metropolitan→Second tier & Small town

City competition:

Business, Living, Governing and Environment

Targeted Persons

Smarter Residents;
Smarter Skilled Employee;

Driver to Attract Talents

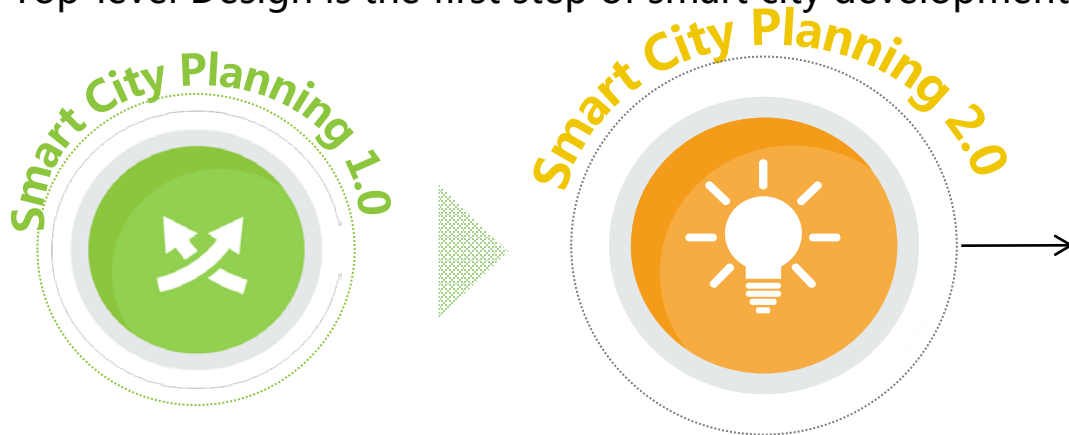
Reconstruct industrial chain;
Industry and city integration;
Government efficiency;
Environment-friendly;

Driver to Retain Talents

Encourage people communication
(local & global);
Spur innovative ideas;
Transfer to tech. and product;

How We Implement Top-level Design

Systematic method: all relevant factors into consideration.
Top-level Design is the first step of smart city development.



- CT: Wireless/broadband;
- IoT: Ubiquitous connection;
- IT: Single module integration;

Top-Level Design

- Identify the **Key Urban/Regional Challenge**
 - **Urban Disease**
 - **Employment Shortage** triggers unstable public security
 - **Comparative Advantage Industry**
ICT & tradi. infra.;
- **Multiple Planning Integration**
- **Digitalization & Flexible Framework**
- **Economic Integration**
 - Expand the market scale & globalization

Solution

Implementation

Identification of Core Challenge

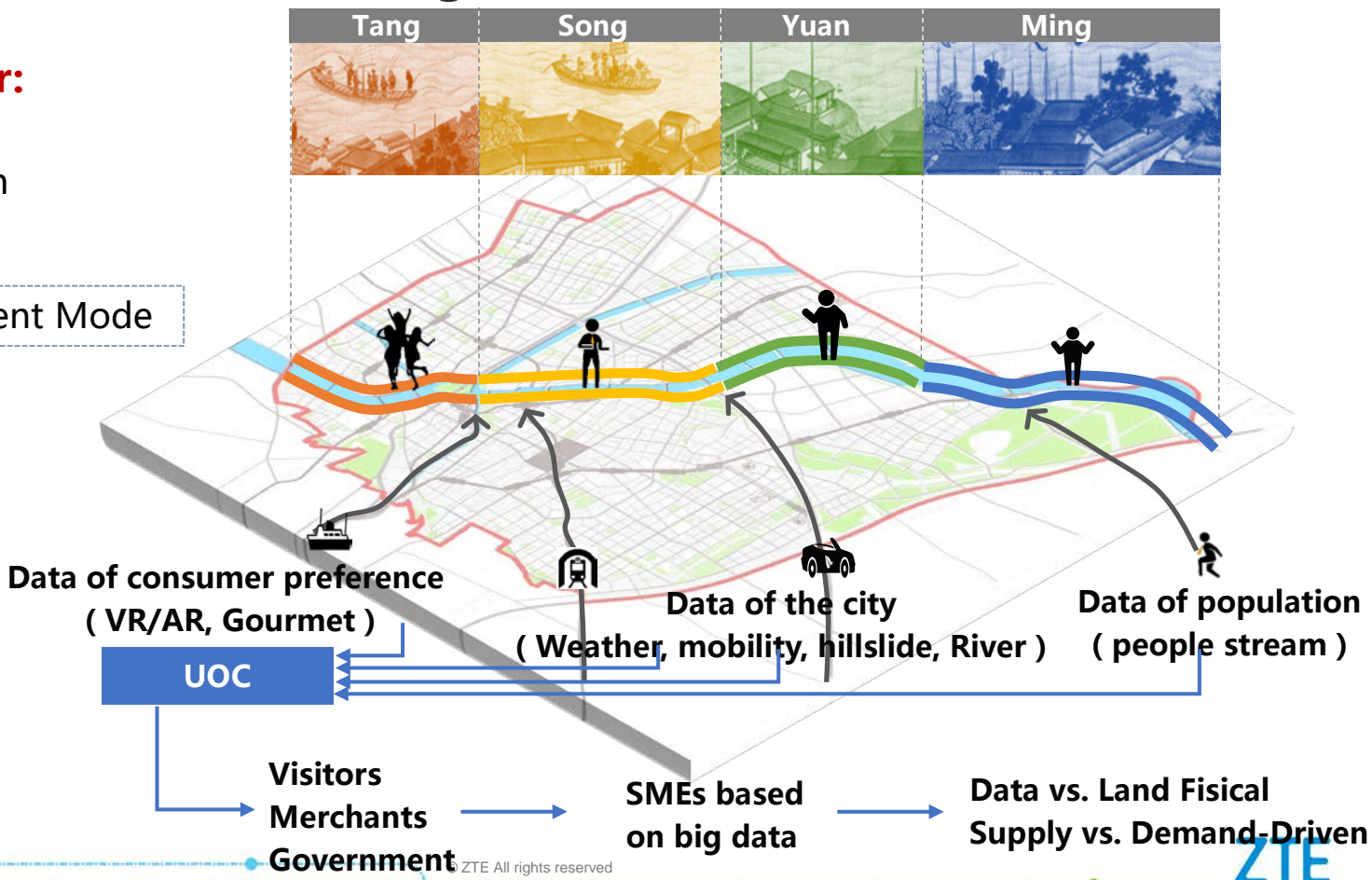
Beijing Sub-Center:

Area: 960km²

Population: 1.6 million

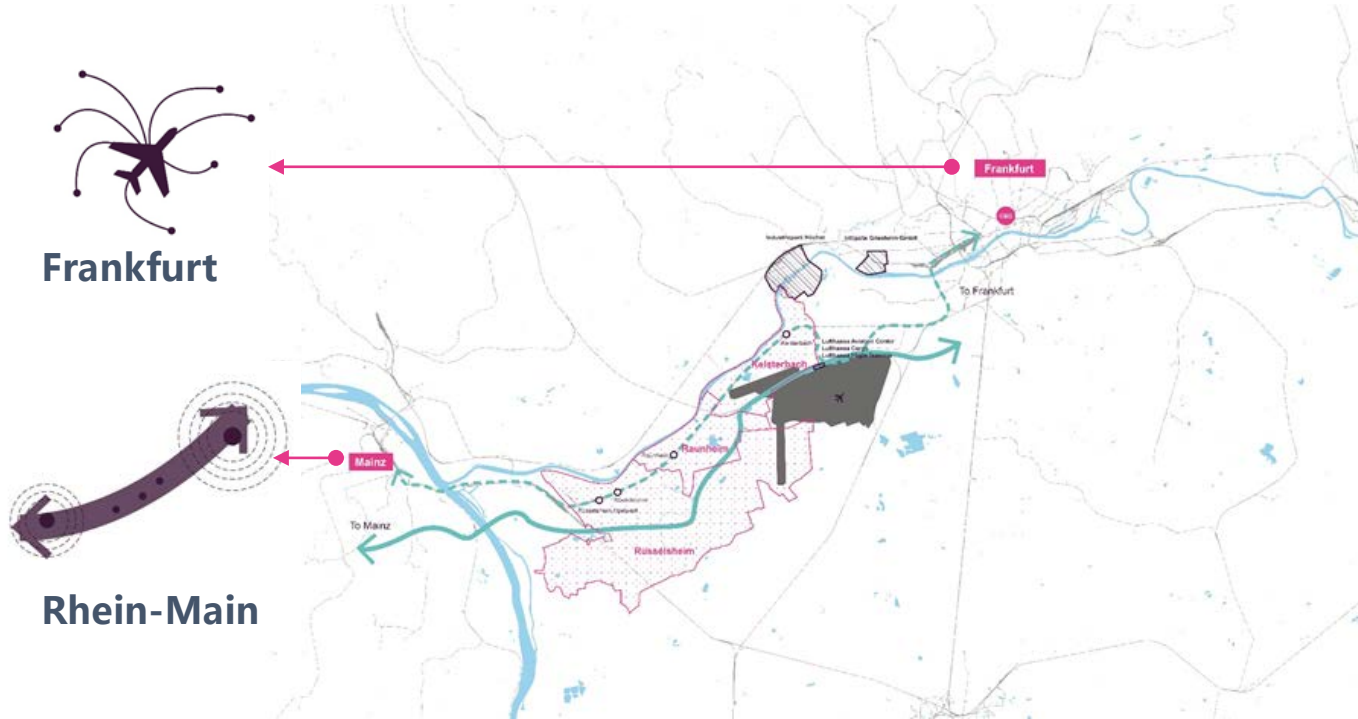
Challenge

Economic Development Mode



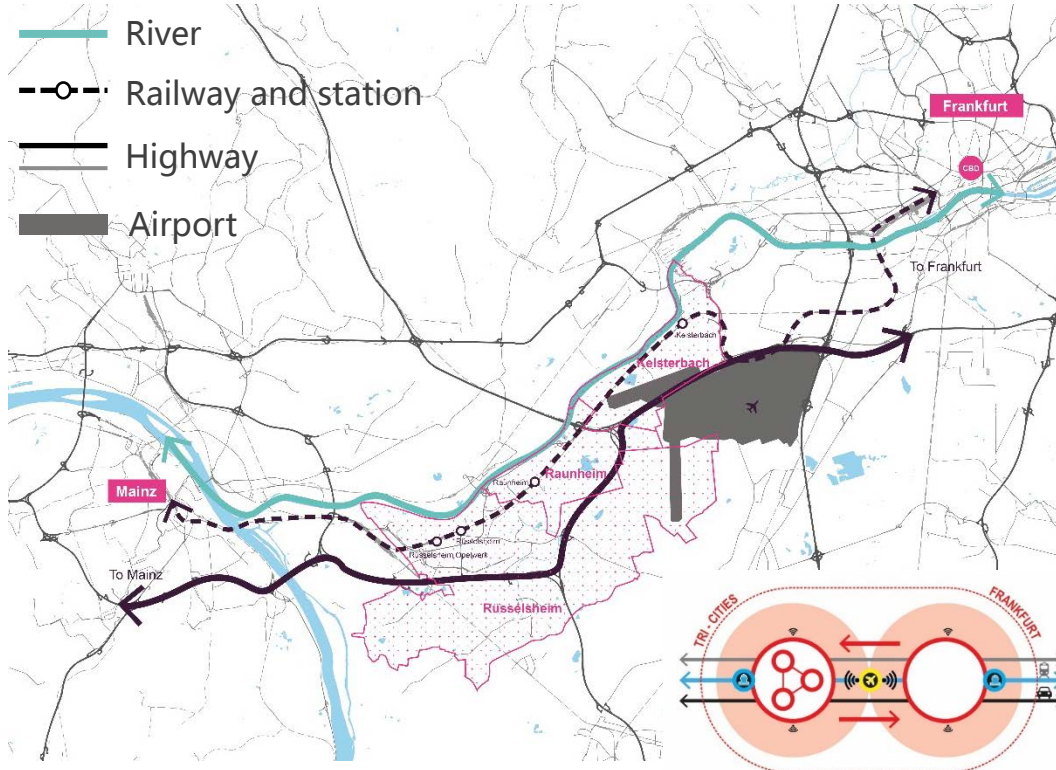
Plannings Integration and Digitalization

Three towns in Great Frankfurt Metropolitan: 100,000 population and 100 km²



Plannings Integration and Digitalization

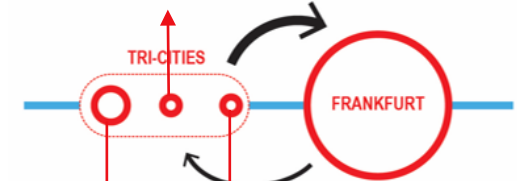
Infrastructure Connection



Commuting Connection

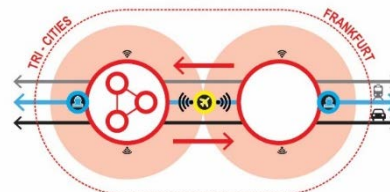
Raunheim

45% of outbound work commuters to Frankfurt



Rüsselsheim

40% of outbound work commuters go to Frankfurt

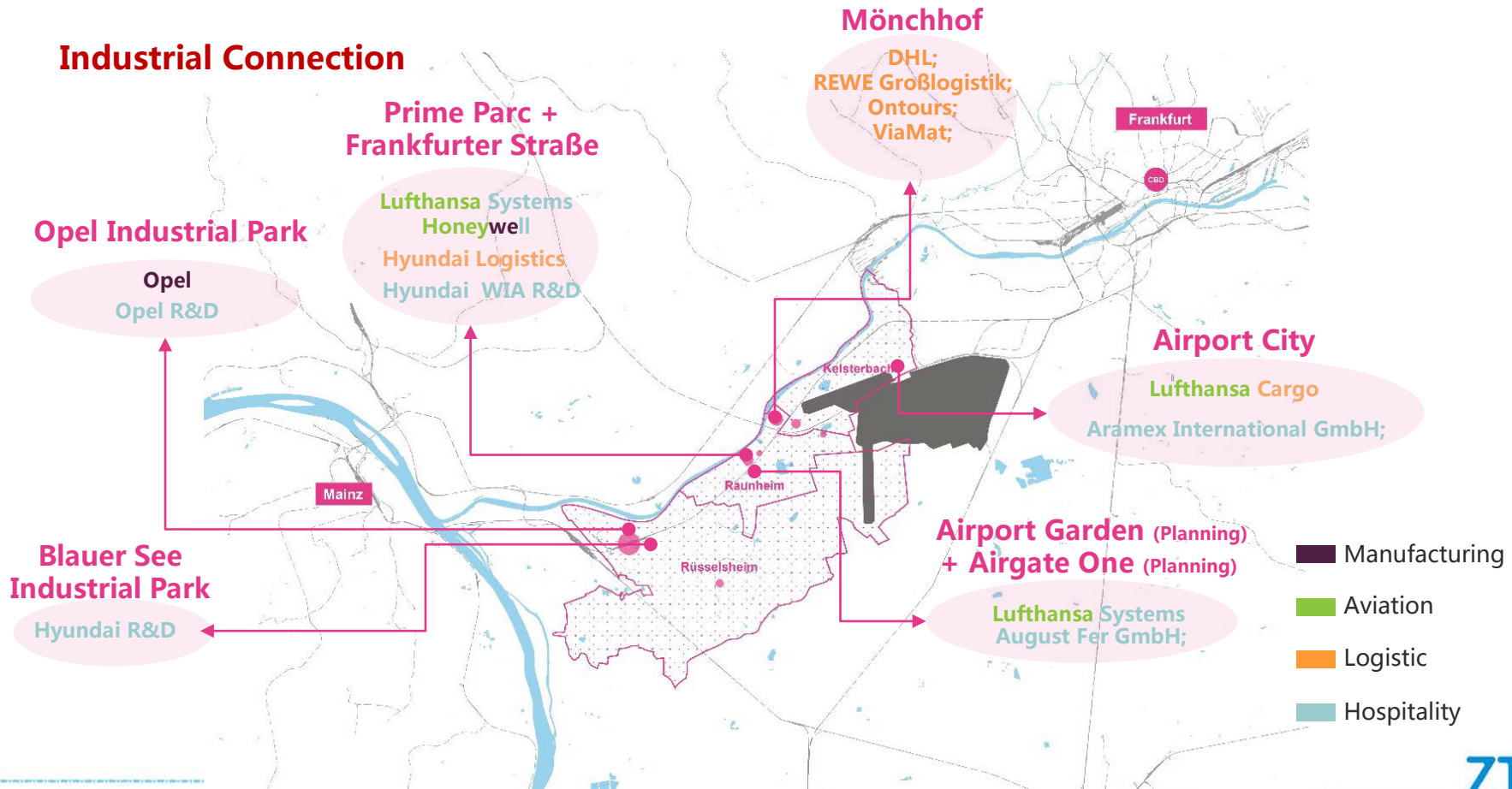


Kelsterbach

60% of outbound work-commuters to Frankfurt

Plannings Integration and Digitalization

Industrial Connection



Digitalization

c

Message:
Sarah is arriving in 40 minutes...
Your package will arrive at 18:00...



Message: 30% Parking Space Left...

Online Management

Illumination Adjustment

Wi-Fi

Smart Metering

Home

School

Wireless Charging Pile

Parking

Train Station

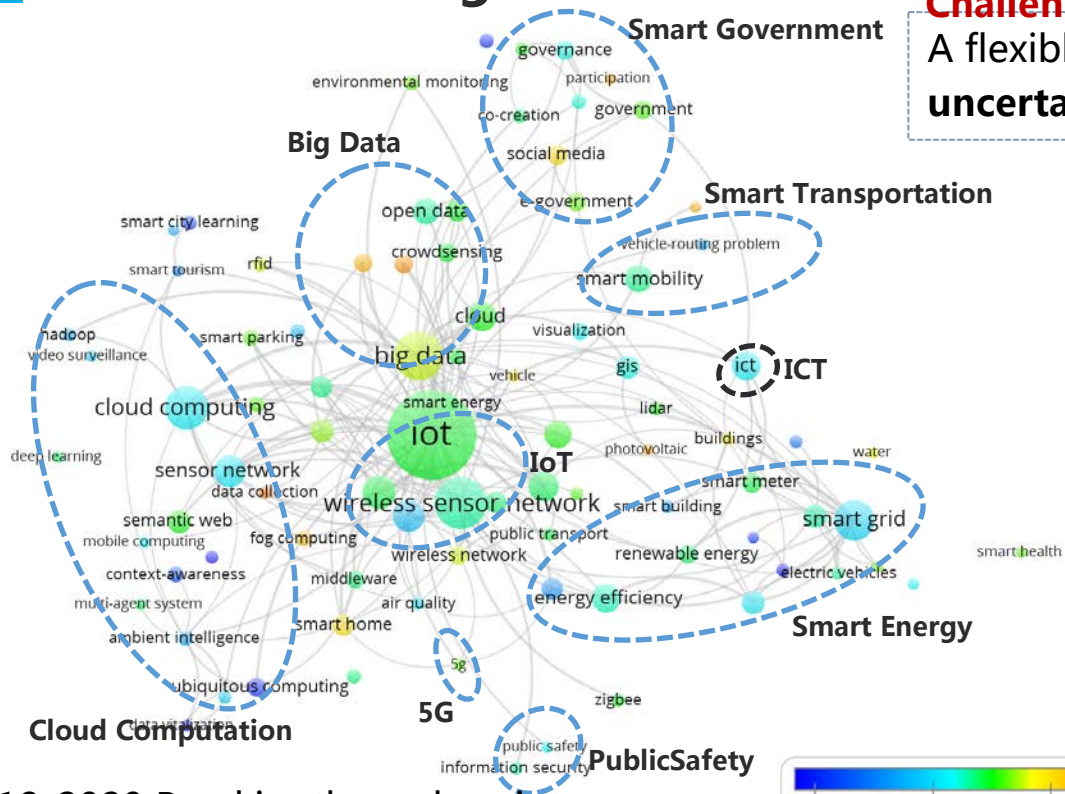
Government

Fundamental Network

b Message:
3 hours later needs charging...

Digital connection:
Enterprise, Home and City

Flexible Planning



Nanjing Area: 15km² Population: 20,000
Challenge

A flexible planning framework to face the **future uncertainties of the technology advancement**;



2018-2020 Breakingthrough point :
 IoT & Big Data & Cloud Computation

→ **City Computation Capacity** (City parts + IoT + Edge Computation)

Economic Integration



Endogenous challenge: Innovation environment

- Attract innovative employee;
- Spur ideas (including the **local youngmen**);
- Establish supply-driven growth model to create **more jobs**.

Exogenous challenge

- **Market scale:** Integrate Southeast European pillar industries (agriculture/fishery/tourism) towards the oriental countries;
- **Efficiency:** Link isolated systems (clearance customs system/transportation system)

Explore Tomorrow's Opportunities out of Today's Challenges via Top-level Design



Leading 5G Innovations

