# SuperMap Solution for Retail Banking

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# BACKGROUND

# Challenges and Opportunities for Retail Banking

How GIS can contribute to Bank's growth?

**External Factors**

- Uneven distribution of population
- Unbalanced economic growth
- Limitation of market data
- Trend in digitalization and fintech
- Tight competition

**Internal Factors**

- Budget constraint
- Manpower distribution
- Inadequate human resource capabilities

**Opportunities**

- Demographic Analysis
- Trade Area Analysis
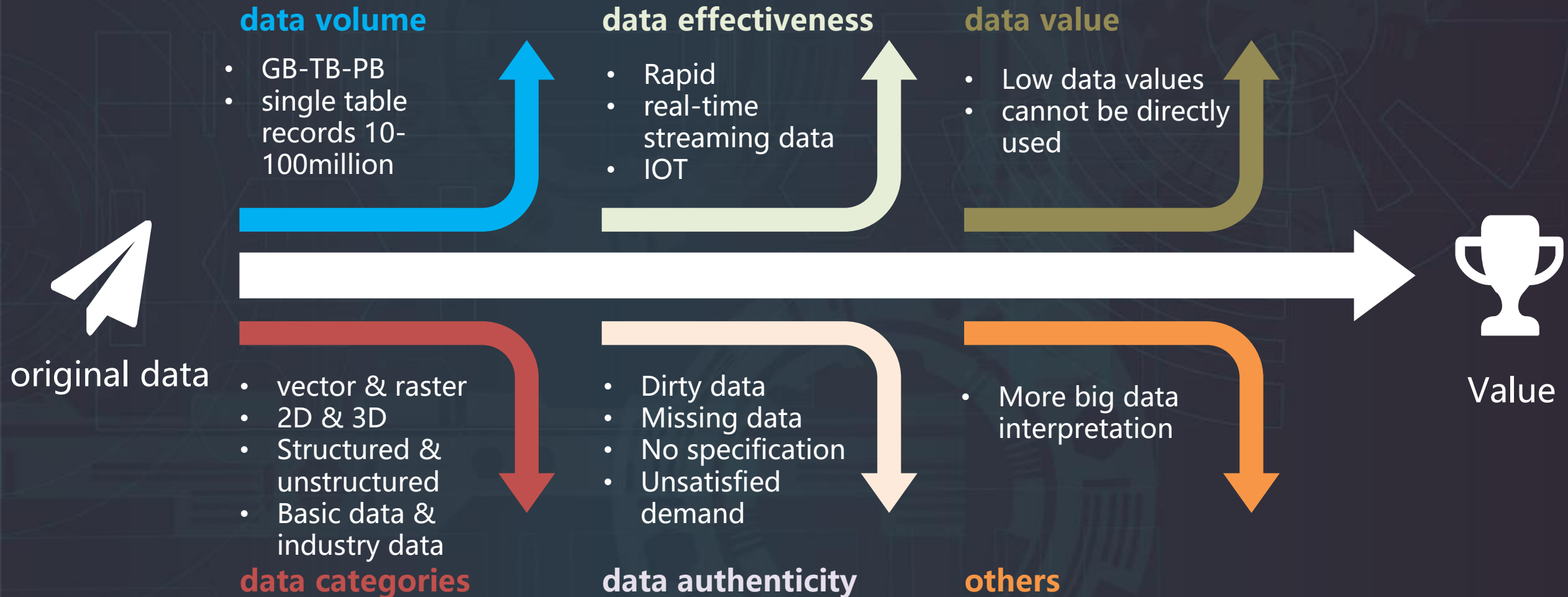- Target Marketing Analysis
- Profile Customer Forecast Market Potential
- Score and predict consumer buying behavior analysis
- Competitive Market Analysis
- Sales Productivity Improvement

# Problems Encountered



**data volume**
- GB-TB-PB
- single table records 10-100million

**data effectiveness**
- Rapid
- real-time streaming data
- IOT

**data value**
- Low data values cannot be directly used

original data

Value

**data categories**
- vector & raster
- 2D & 3D
- Structured & unstructured
- Basic data & industry data

**data authenticity**
- Dirty data
- Missing data
- No specification
- Unsatisfied demand

**others**
- More big data interpretation

# Why location is important for business?



Shows area profile

Choose for strategic place

Locate business competitors

Measure distance to customers

Find best route and easy access

IoT

Cloud Computing

Big Data

AI

wireless communication

New Advanced Technology

GIS

# SOLUTION

# Banking GIS System



Bank Site Management and Monitoring

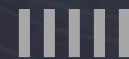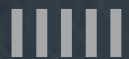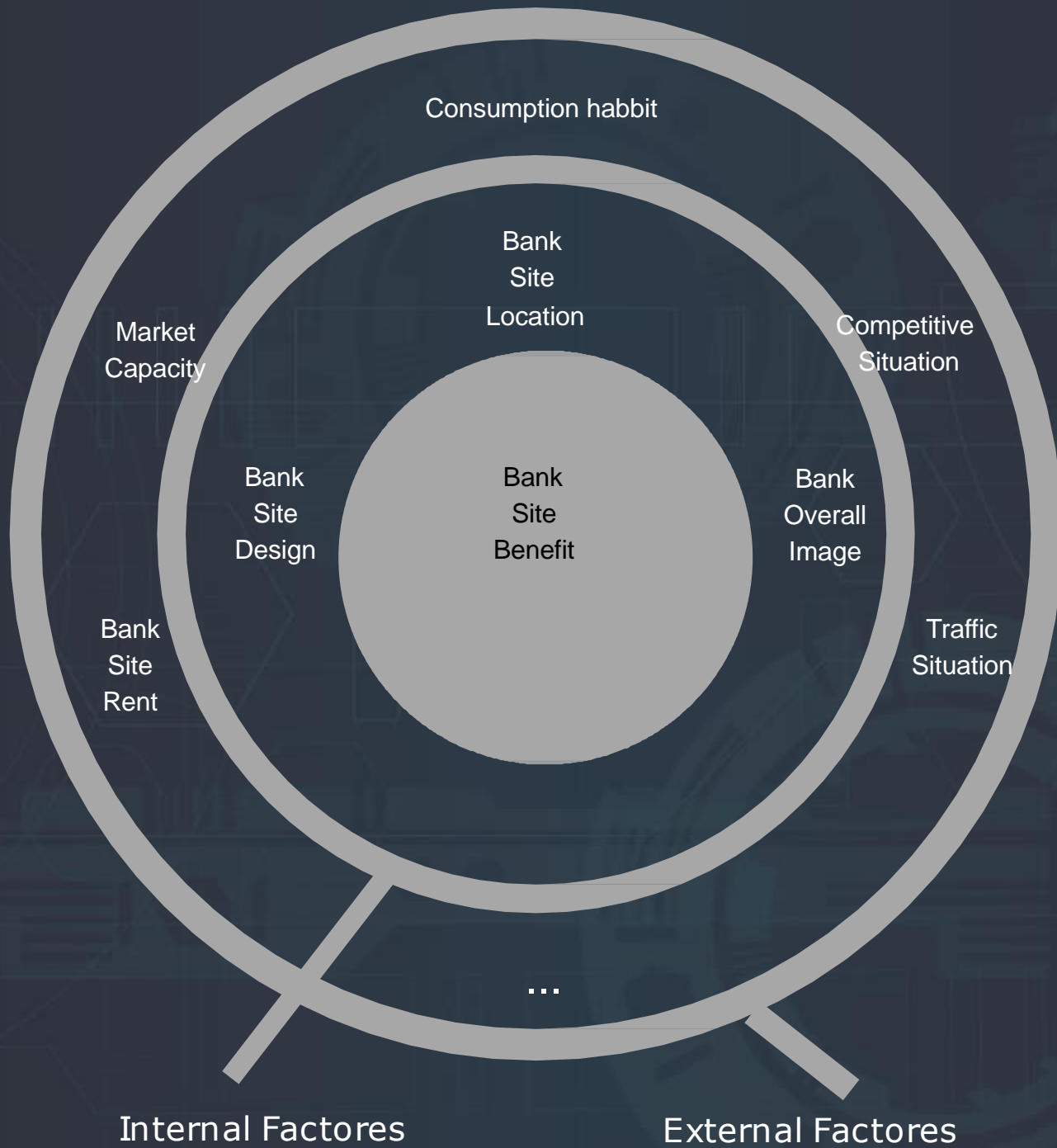ATM Network Management and Monitoring

Location Analysis of ATM and Bank Site

Mobile Application

# How does it work?

Map each branch market potential

Analyze each branch POI distribution with existing customer distribution

Identify bank's customer location

Analyze market potential by combining with external data

Information

Visualize

GIS

Strategy

Analyze

Review

# Features



| Demographic Map | Site Selection for Banking | Business Unit Management | Customer Mapping for Banking | Market Profiling for Banking | Business Expansion Planning | Branch Performance Monitoring |

Consumption habbit

Bank Site Location

Market Capacity

Competitive Situation

Bank Site Design

Bank Site Benefit

Bank Overall Image

Bank Site Rent

Traffic Situation

...

Internal Factores

External Factores

Implementation plan of urban planning

The urban development plan

- Short-term factores
- Urban planingg
- Implement plan
- Economic indicator
- Historical data

- Long-term factores
- Urban planning
- Development strategy
- Long-term economics trend

Precise and real-time display of sales network — Sales Network Management

Fine management of business scope — Division Management
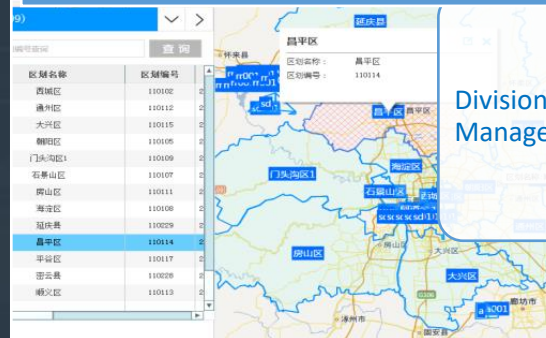
Position the areas of responsibility — Area Management
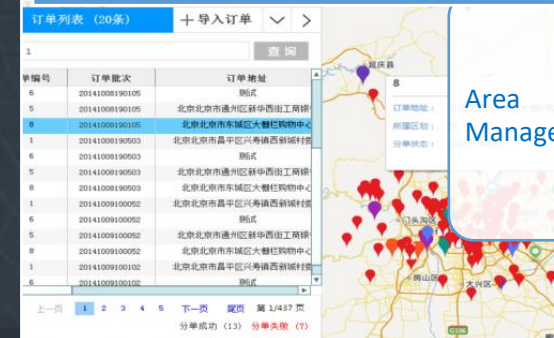
Provide optimal Delivery Routes — Route Planning

Get position and status of staff, vehicles, and goods — Vehicle Management

Statistical analysis and visual display of business data — Operational Analysis
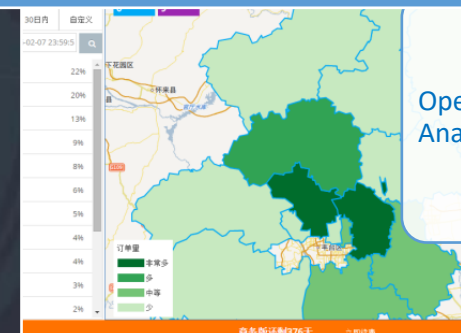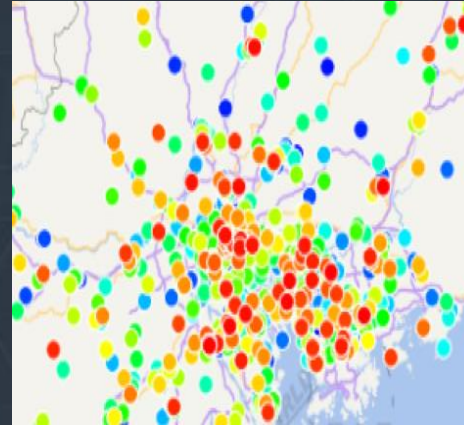
# Data Visualization

Gather external data of POI, industry and demography

Analytics to combine external data with internal data

Display strategic places, customer profile, location insight, competitor analysis, and distribution channel

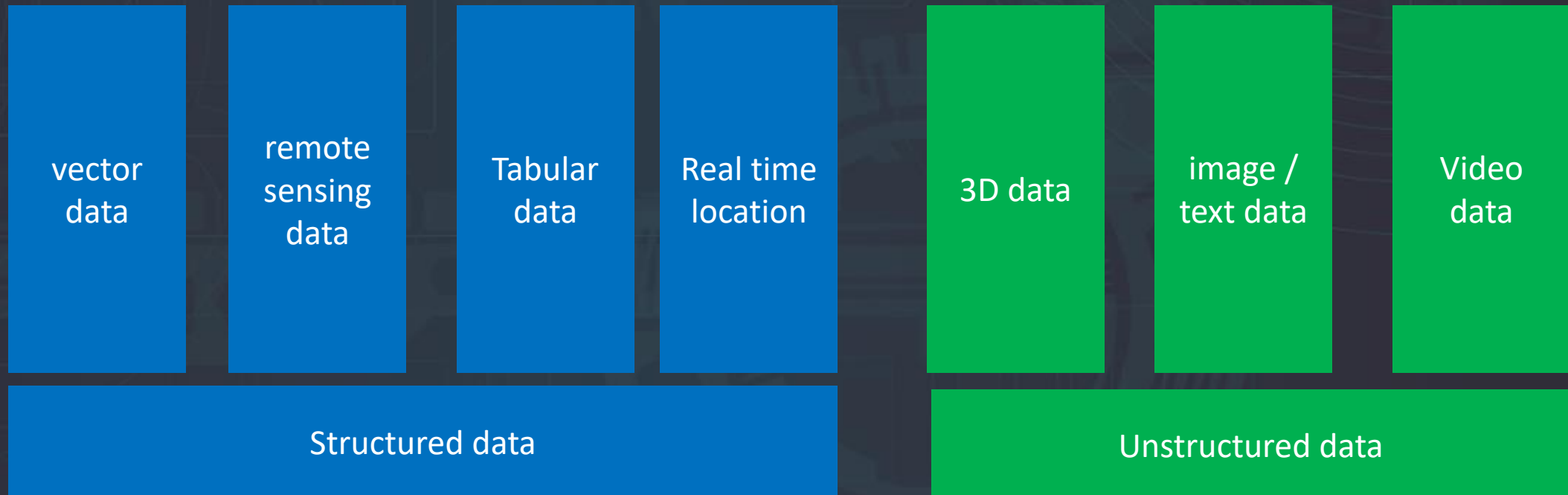Monitor the sales review

Segmentation
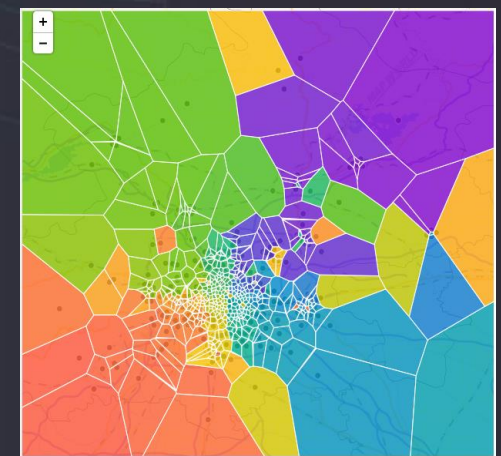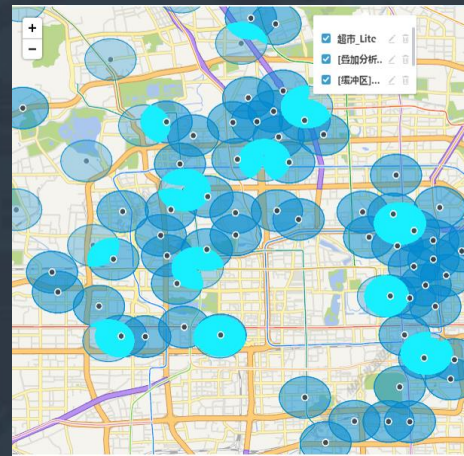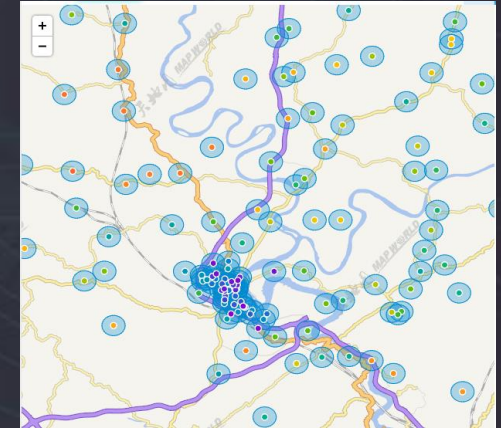
# External Data Library

- Population
- Age
- Gender
- Expense
- Crime Level
- Education
- Zoning Regulation
- Disaster Area
- Land Value

- Road
- Public Facility
- Industrial Map
- Plantation and Mining
- Bus Route
- Tourism Industry
- Health
- Point of Interest (POI)

# Data Visualization

Files

Longitude
Latitude

Point Datasets

Marker
Symbolization

Thematic Map

Service Area  Overpass  Oil Station  Toll Station  Camera  Market



SuperMap
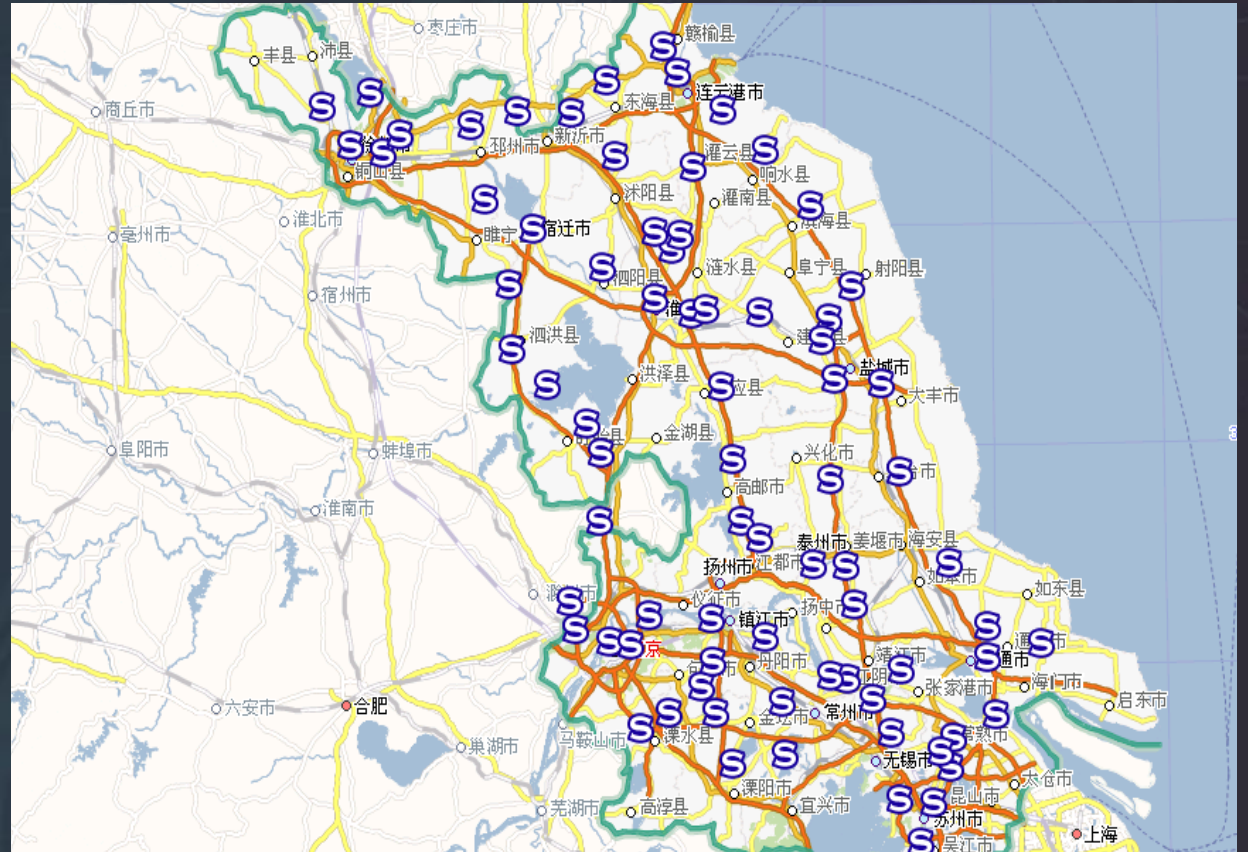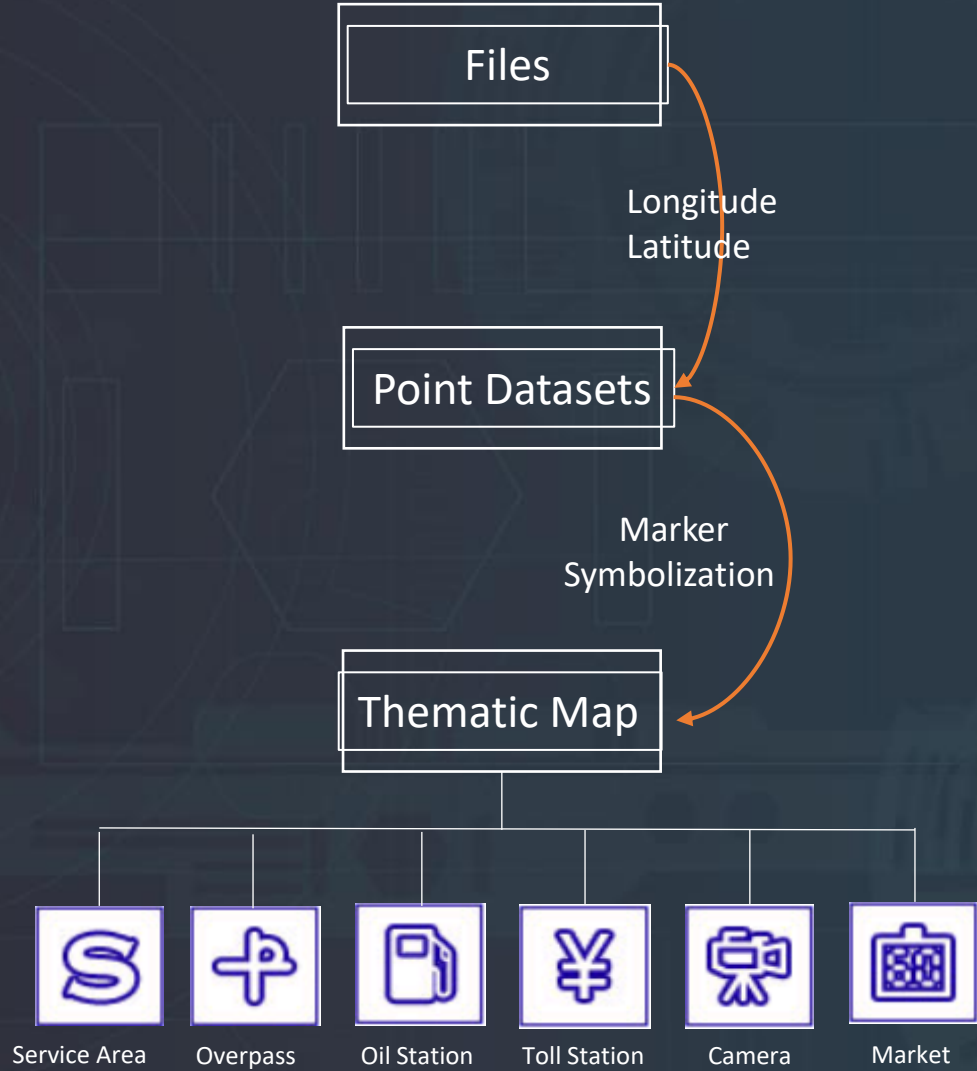
# Resource pool

- Traditional cognitive
- Static data
- Dynamic data

- point type
- The data volume exploded
- Data analysis and mining

- Single file size is big
- Not a lot
- as a map reference

- Large amount of datastatic data

- Multi-source data

| vector data | remote sensing data | Tabular data | Real time location |
|---|---|---|---|

**Structured data**

| 3D data | image / text data | Video data |
|---|---|---|

**Unstructured data**

# Geographic Information and IoT



Logistics

Intelligent household

IoT

Shared economic

Publish security

Geographic information big data
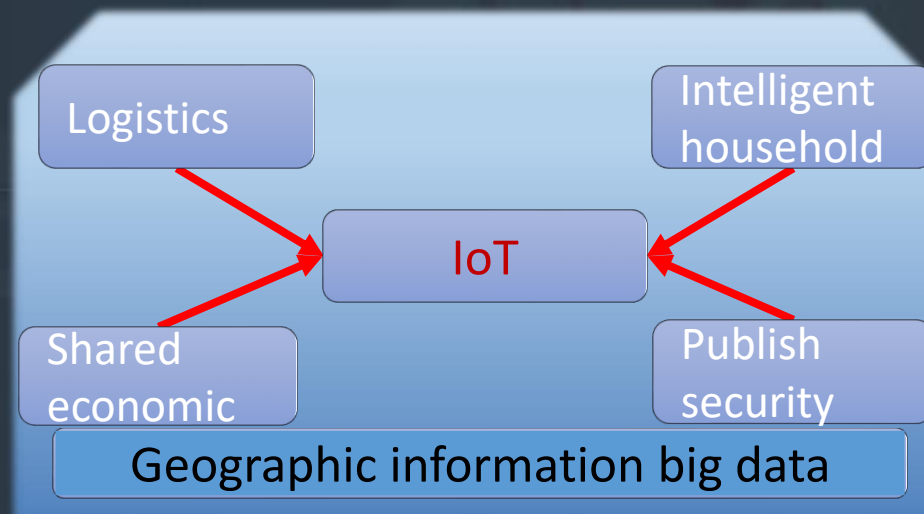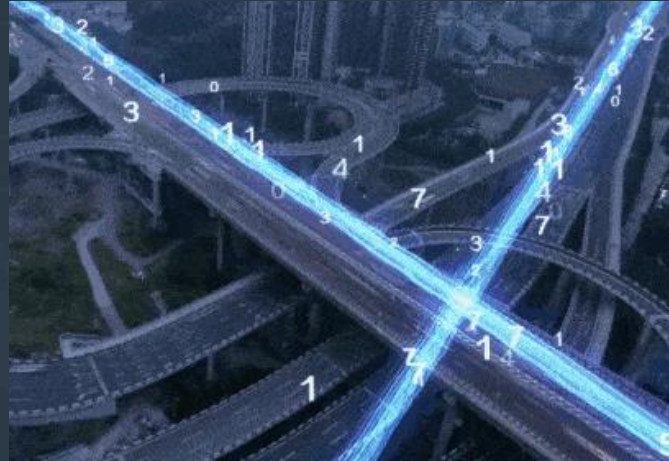
Congestion query

条件查询

年月: 2017年07月

星期: 星期天

是否工作日: □ 是

开始时间: 5点0分

结束时间: 10点0分

最小拥堵时长: 0 分钟

最大拥堵时长: 60 分钟

拥堵最少次数: 2

拥堵最大次数: 20

累计最小时常: 3

累计最大时常: 300

🔍 查询

丁香路：3

**Details** ⊗

Road section information

Index: 4683

Road: 丁香路

Level: 3

Congestion times and duration

Times: 19

Duration: 306 Minutes

Other information

Data: (20170401-20170531)

Time: 20170630

常发拥堵

Real-time Query

# Data Analysis

New leads for sales team, for new-to-bank customer

ATM network and branch optimization (Site Selection)

Quantify and cluster the size of each market potential

Calculate bank's market share in each branch location

Comprehensive dashboard data to see trends and display the statistic of total branch, population, average purchasing power (per capita), average income, etc
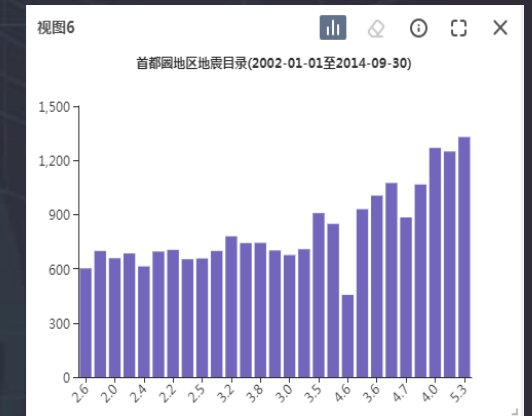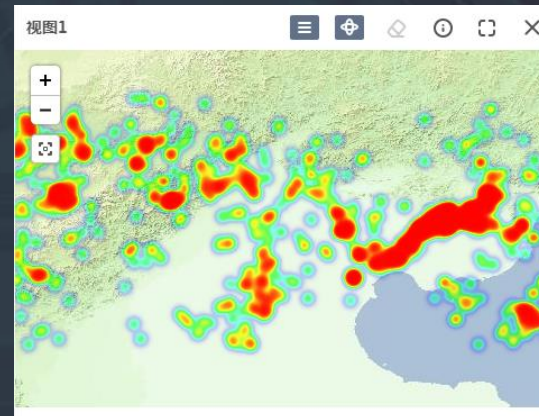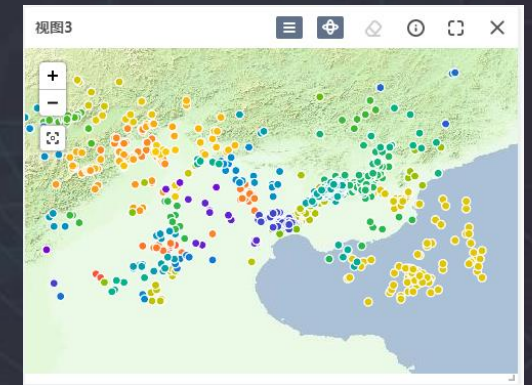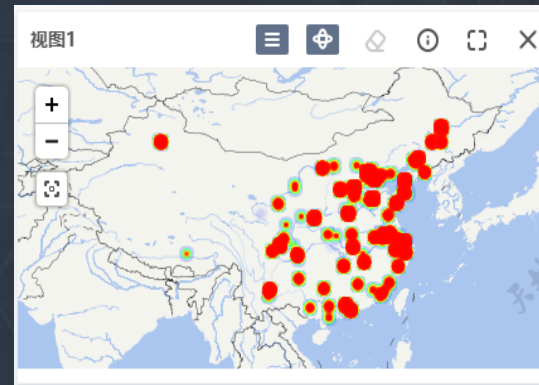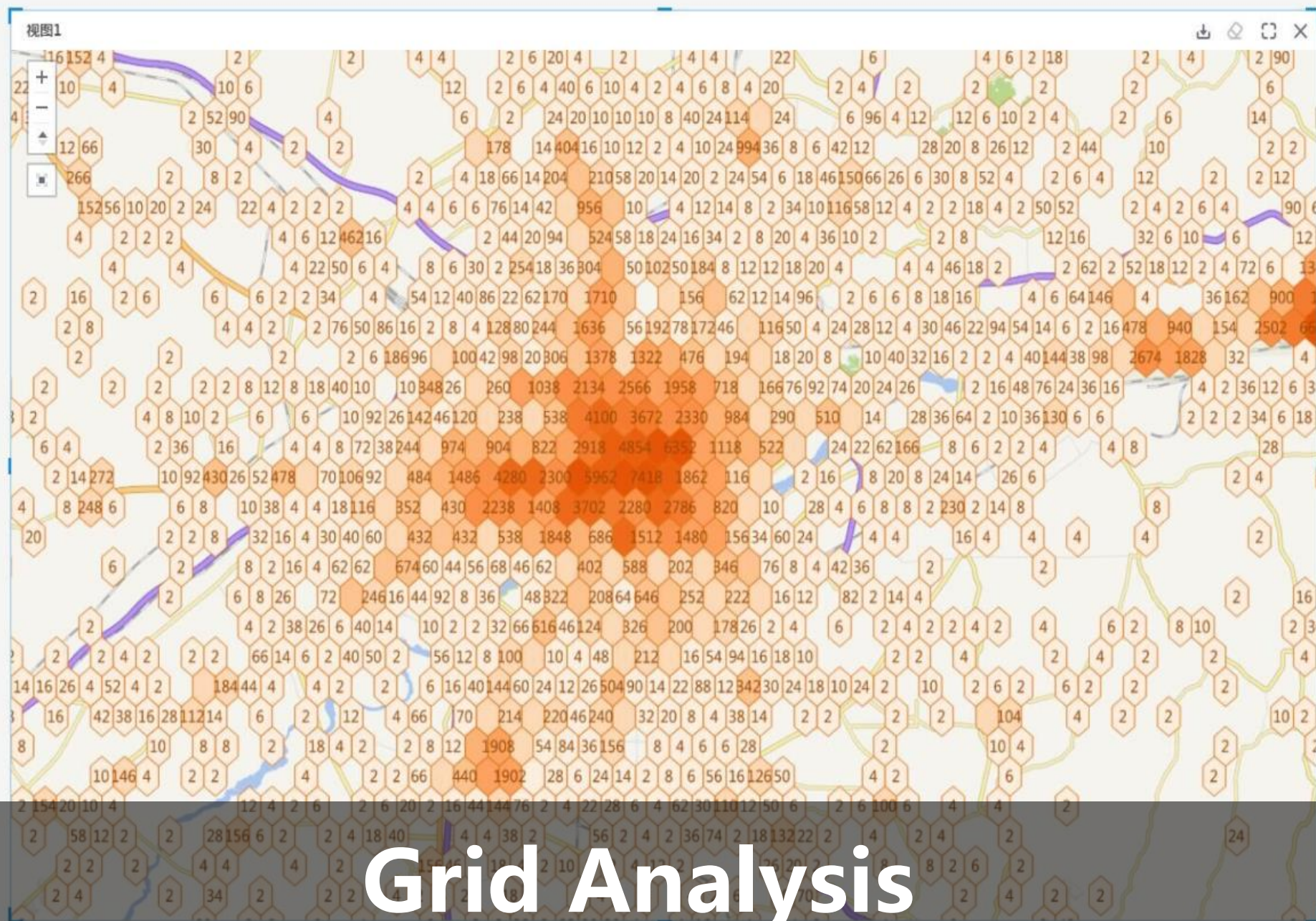
Grid Analysis

# Spatial Density Analysis

## The principle

To calculate the spatial distribution density of elements, not only the area but also the surrounding influences are considered.

## The legend
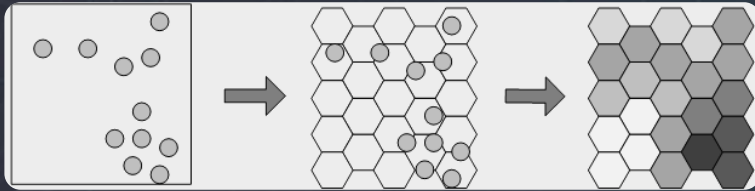


## Application scenarios

The existing mobile signaling location data can be calculated to get the aggregation diagram of the flow distribution, which can assist in base station deployment and network optimization.
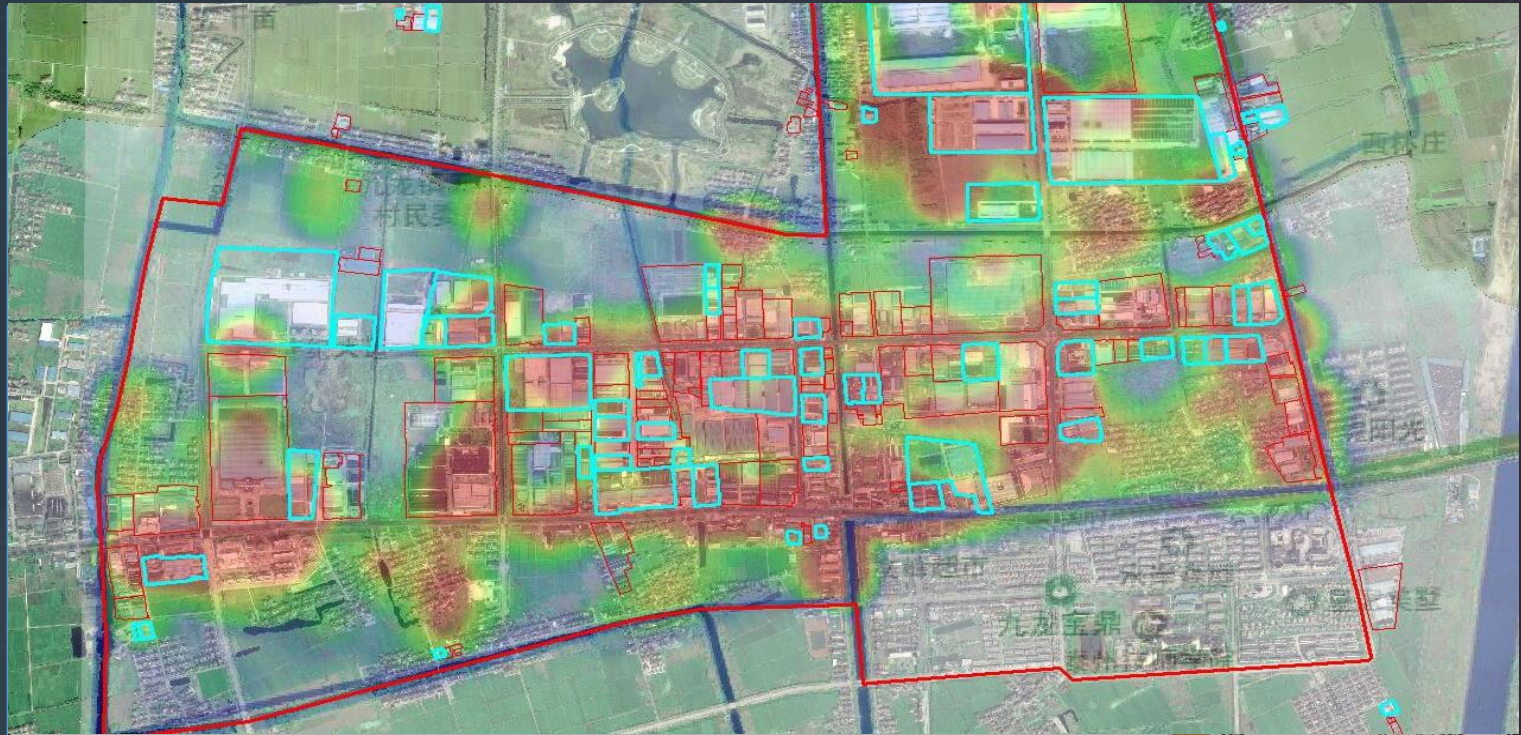
# Building A Multivariable Grid

## Function Introduction

- Summarize multiple data into one layer for display and analysis
- Support rectangular grid and hexagon grid

## Grid Summary Method

- Nearest object distance / property
- Neighbouring / intersection object attribute statistics

## Applicable scenario

- The site selection needs to be considered from multiple dimensions, such as population, population education, house price, surrounding shopping malls and other factors.

| | Nearest Bank Distance | 5KM Key Bank |
|---|---|---|
| 203 | 3600 | Bank 3 |
| ... | | |

**Object Distance / Attribute Summary**

Neighbouring / intersection object spatial attribute statistics

Bank 1

Bank 2

Bank 3
(Key Point)
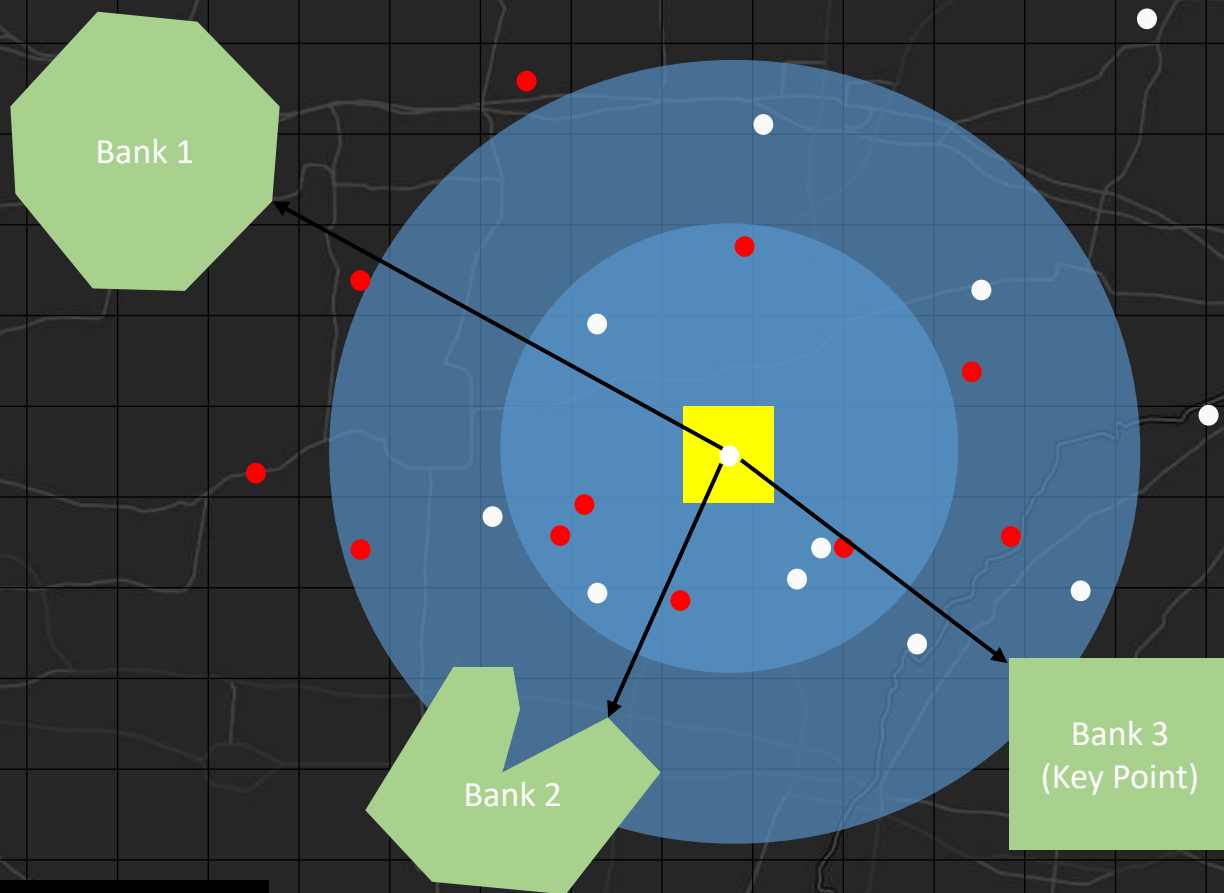
**Legend:**
- Bank
- Bus Station
- Hospital

| 格网 | 最近 学校距离 | 5KM 重点学校 | 5KM 医院数量 | 10KM三甲 医院数量 | 5KM覆盖 公交站点 | ... |
|------|------|------|------|------|------|------|
| 203 | 3600 | 学校3 | 4 | 2 | 4 | |

Site Selection

# Service Area Analysis

The service area analysis mainly analyzes the service scope of the service facility to provide the decision-making for business analysis. A service facility generally has its own service radius, such as the different types of supermarkets have distinct service radius (service area).

# Sales Network Management

# Bank Site Management

# Vehicle management

# CCTV Integration

# Heat Map Display
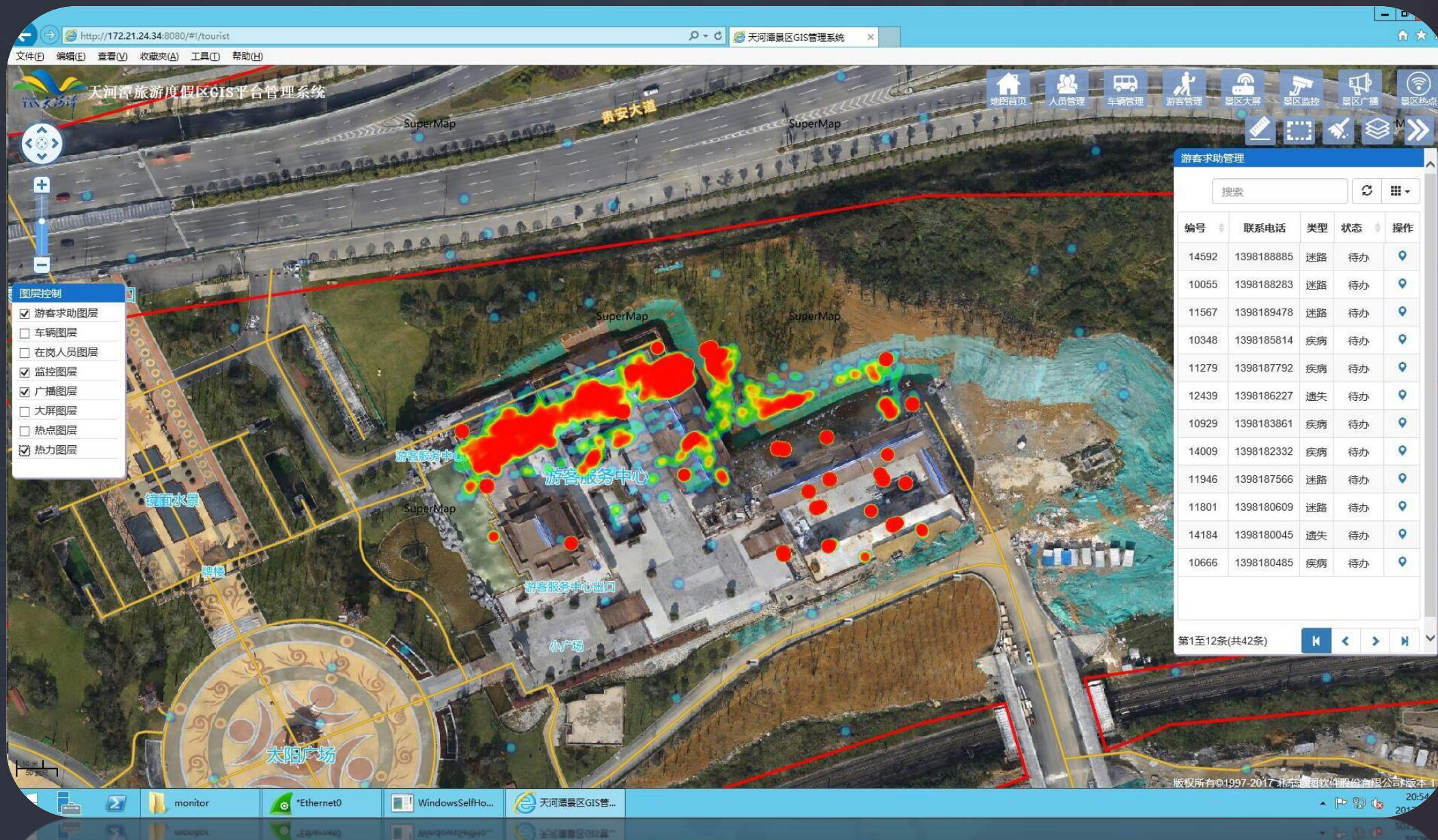
# Location Analysis Simulation
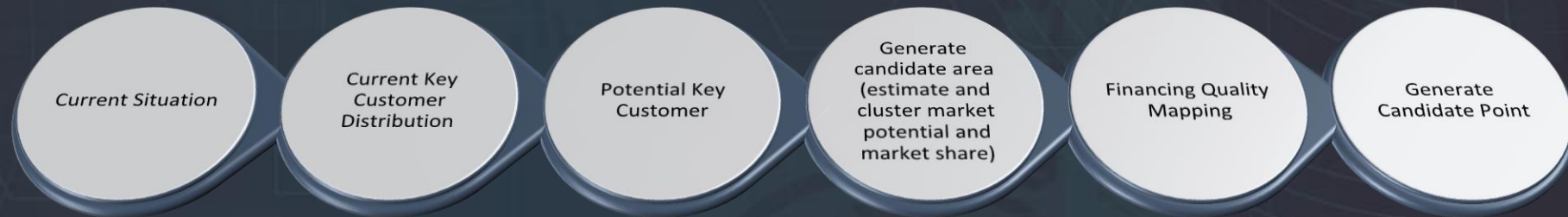
# Location Analysis

Business Survey Data

Data organization of the system

Social Economic Data

Map and Planning Chart
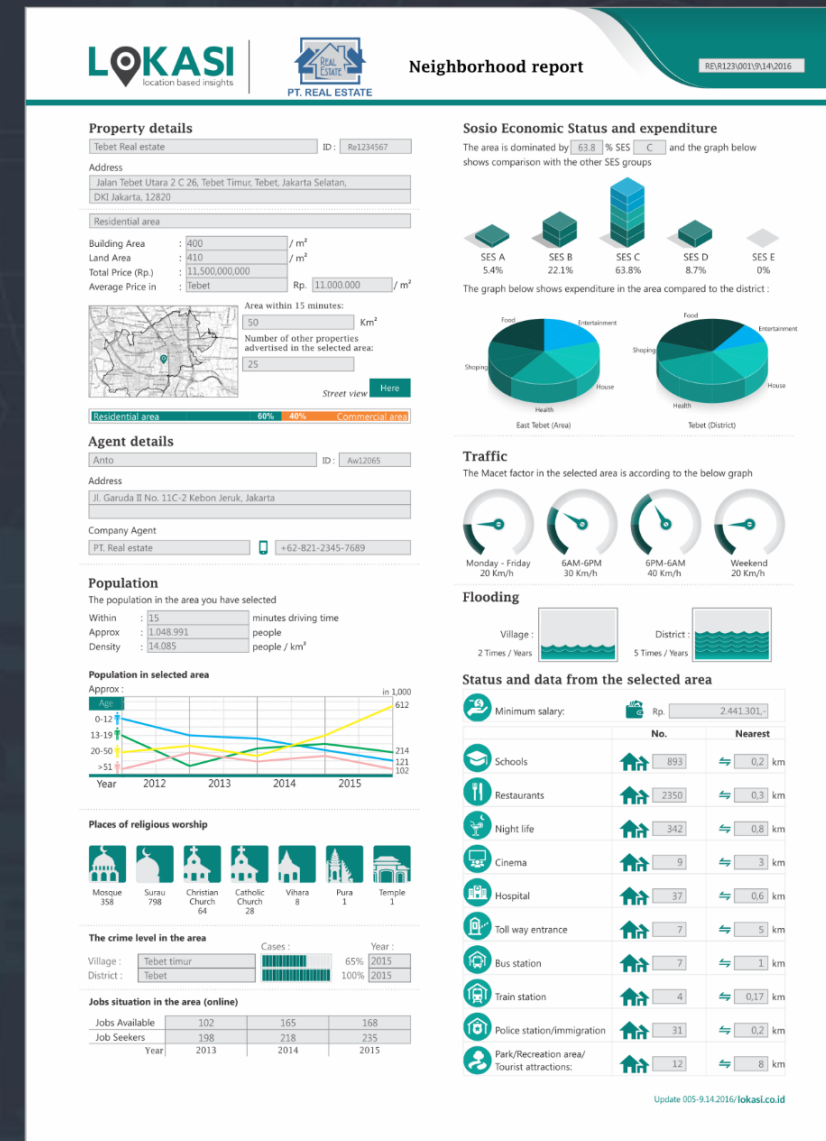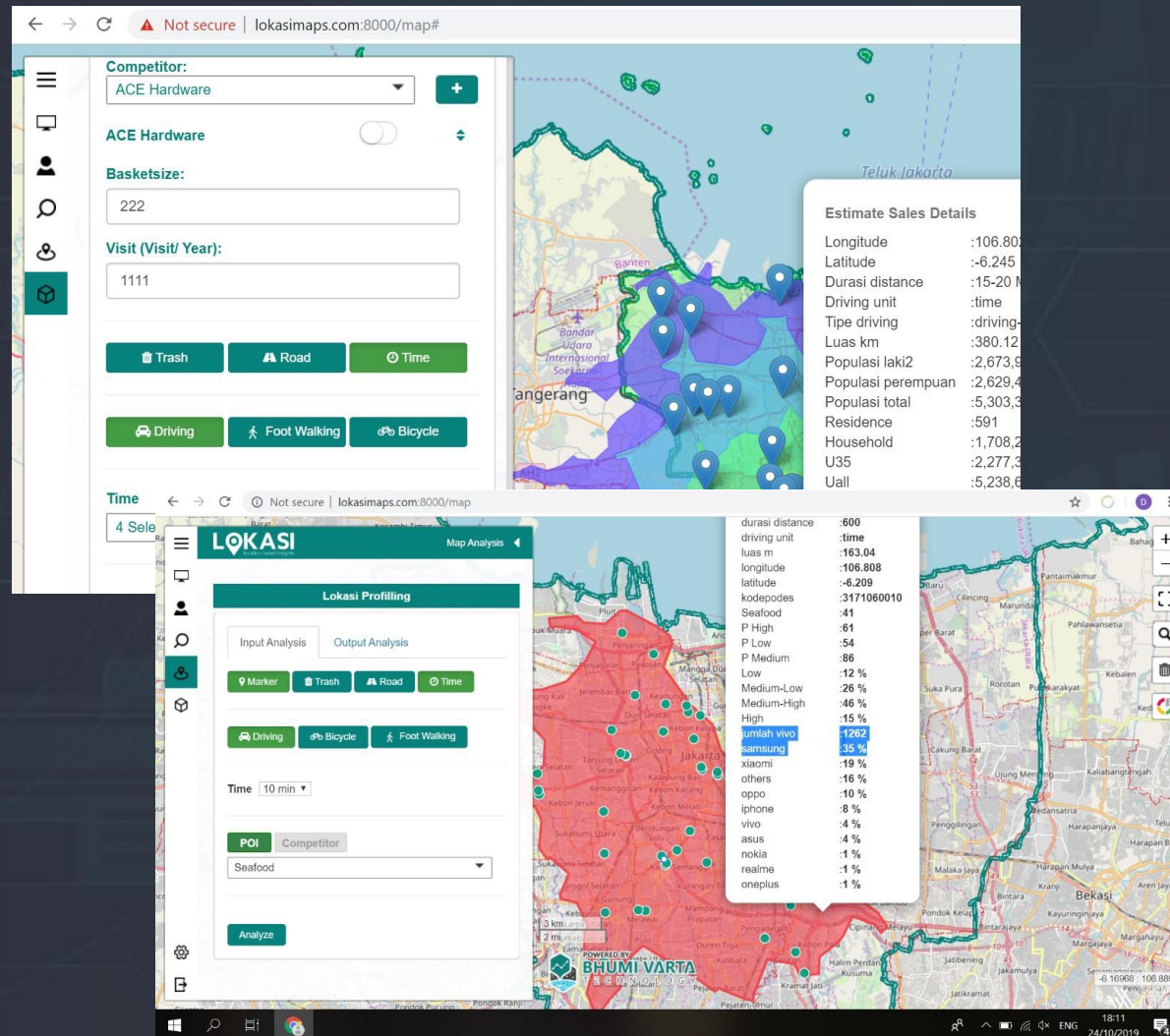
Client information

Bank information

Traffic network information

Thematic map of society, economic and population

Geographic map

# Location Insight

# Mobile Reporting

- GPS is used to locate the incident, fill in the form information quickly, assist multimedia means such as photographing, hand drawing, audio, etc., clearly display the site status, and report in real time based on the mobile network



Location

Report

Checking

# Advantage

Monitor activity in real time

Optimize ATM network and acquire customers with less branches by analyzing site location

Being agile in market change as technology also keep changing

Improve Sales Productivity

# Position and Audience of Data Science Service

Position：Platform for GeoAI and Spatial Data

Meet the needs of online data processing, modeling, mining and analysis based on spatial data

GIS analyst

Developer

Data analyst

Data Scientist

# Thank you!

Email : vella@supermap.com