BigData
Tourism Solution,
activating tourism for local governments

Platform Business Planning Office
BigData Center

2016. 06

Global No.1 KT

kt

Social infra and business problems ···
Floating population, answer for various needs

Needs for Floating pop. Platform

Public
- ✔ Amount and route of movement
  to optimize route of public transportation
- ✔ Weak spot detection
  to design route for disaster refuge
- ✔ Activation plan for small business
- ✔ Movement and staying area of tourist
- ✔ Weak-safety spot, where to install CCTV

Retail
- ✔ Where to open new store
- ✔ Guiding customers route

Finance
- ✔ Understanding right to store-keeper
- ✔ Considering urban planning
  at household loans

Leisure Security
Traffic Service
- ✔ Designing shuttle bus route
- ✔ Security service spot
- ✔ Car-sharing service spot

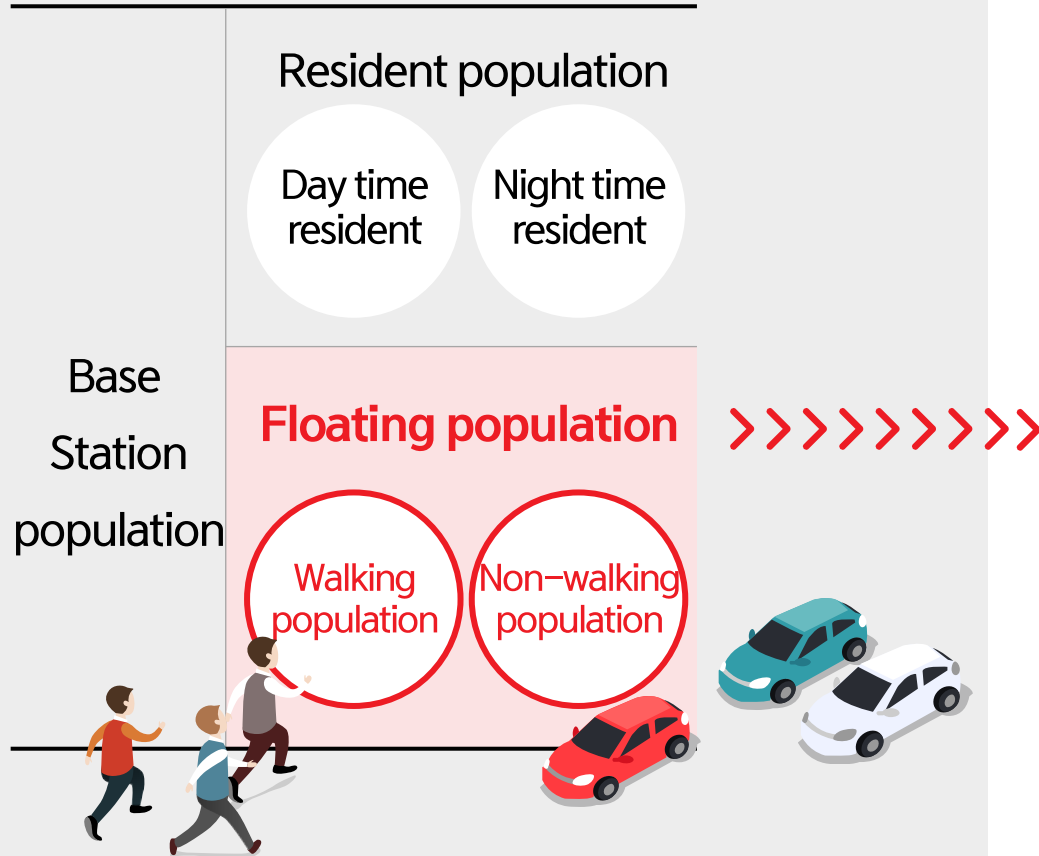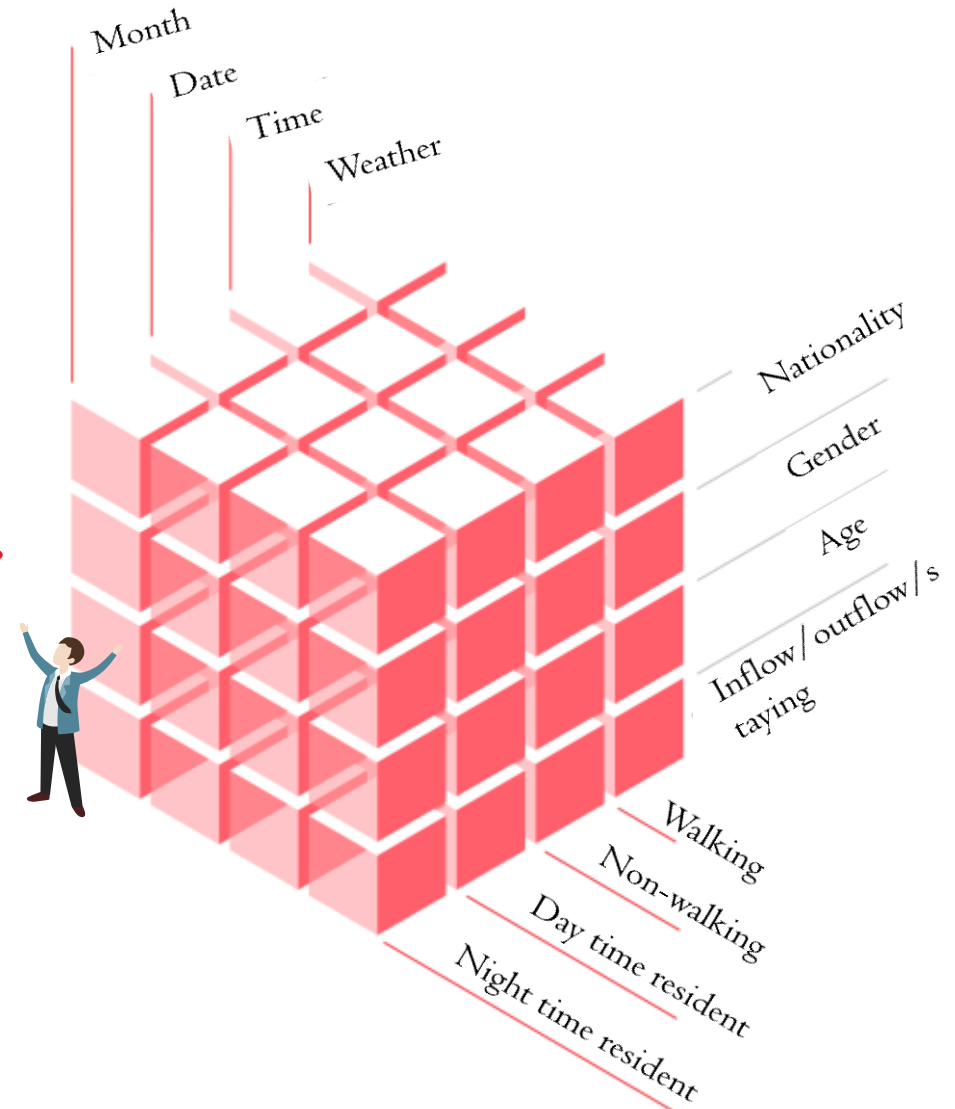Walking floating ⋯ Non-walking floating ⋯ **Floating population Platform** ⋯ Day time resident ⋯ Night time resident

Logic of Floating population

Detailed category of **diversifying non-resident population**

Analysis dimension of solutions

Framework

Resident population

Day time resident

Night time resident

Base Station population

Floating population

Walking population

Non-walking population

>>>>>>>>>

Month
Date
Time
Weather

Nationality
Gender
Age
Inflow / outflow / staying

Walking
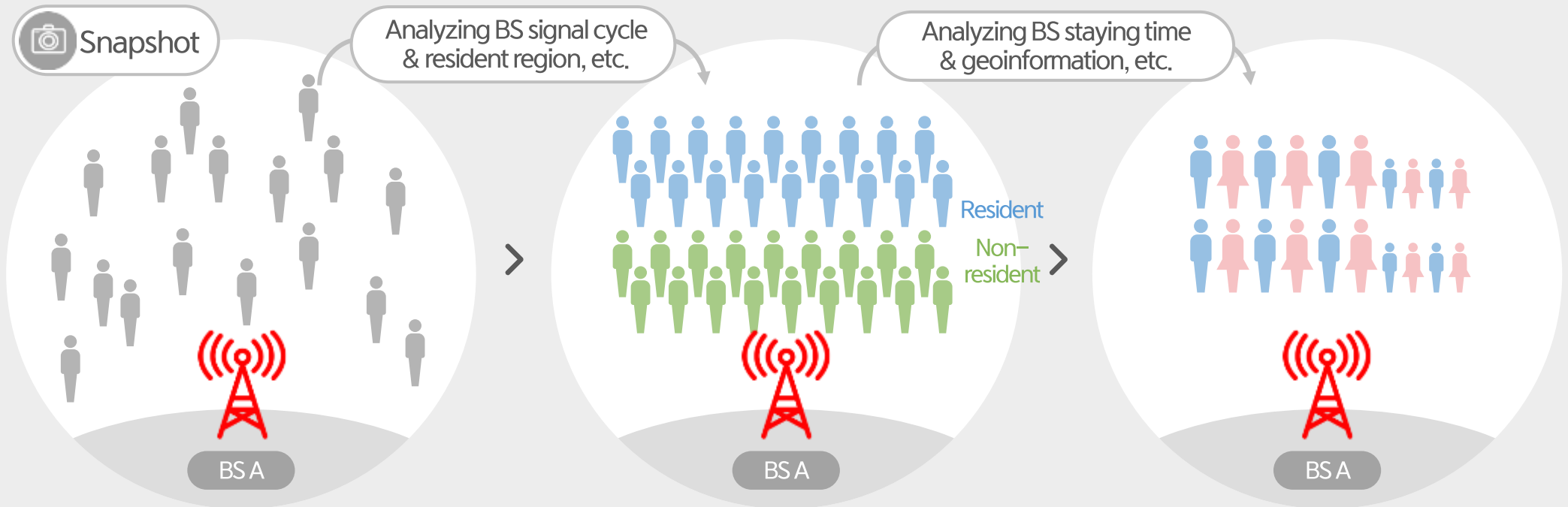Non-walking
Day time resident
Night time resident

After dividing BS population, which is space data collected from Base station, into
Resident & Non-resident, we generate 'Walking population'

| BS population | Resident & Non-resident | Walking population |

📷 Snapshot

Analyzing BS signal cycle & resident region, etc.

Analyzing BS staying time & geoinformation, etc.

Resident
Non-resident

BS A

BS A

BS A

BS Population

Snapshot population
Total number of users in BS
De facto population

Resident population

Staying population
in resident region(home/office)

Non-resident population

Floating, moving population
in non-resident place

Walking population

Estimated population of walking
in floating population

Assign anonymized walking population in 50x50m cell, and then convert
reclassified personality of assigned population into **goal-driven data**

Data collection after anonymization

- LTE Analyzing server
- topograghy, roads
- location, property
- gender, age
- Geo-information
- Signal management information
- Demographics

Walking population analysis based on 50 cell

- Walking
- Day time resident region
- Night time resident region
- 50X50m

Intensified analysis

- Commercial zone P.O.I
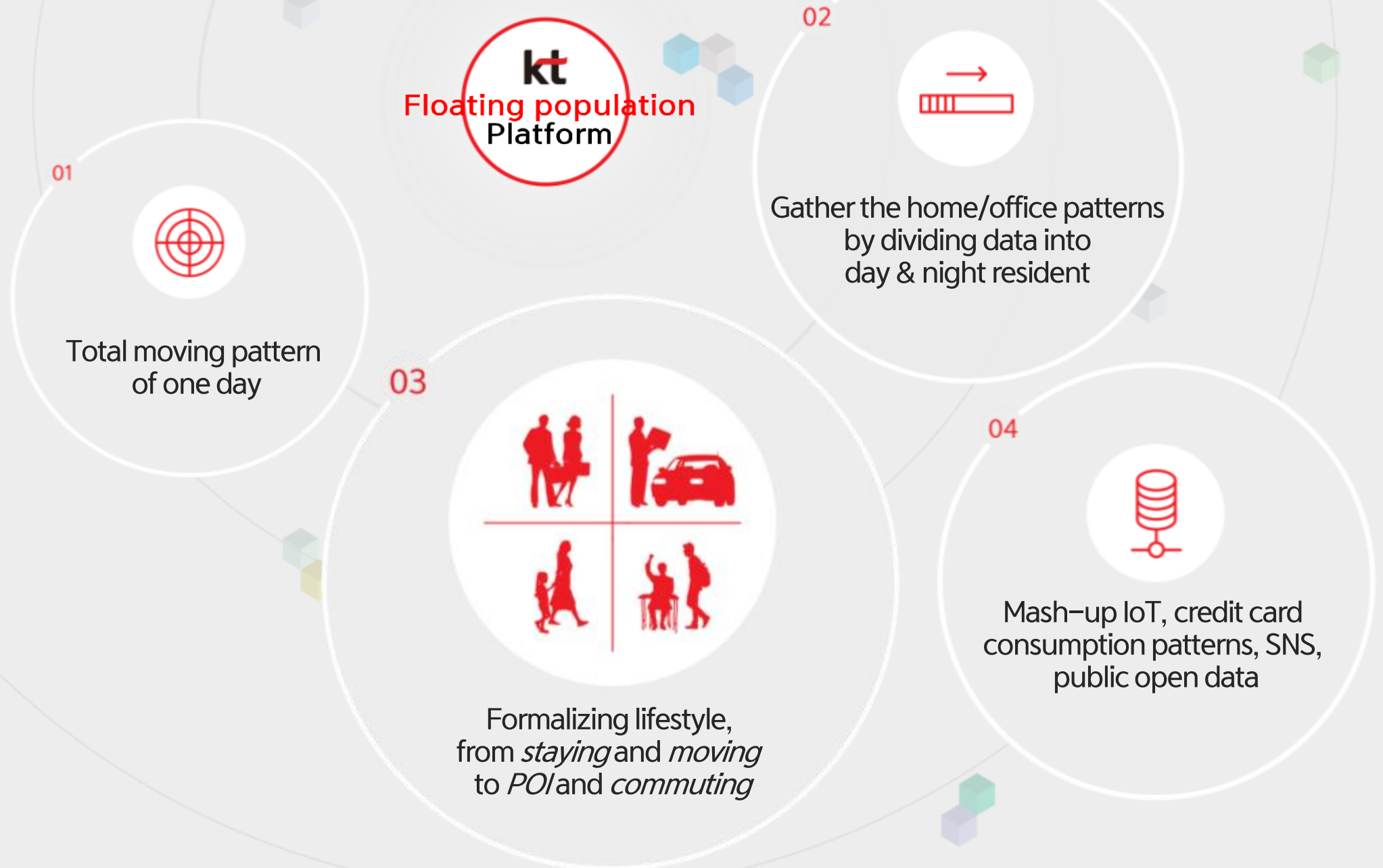- Tour zone P.O.I
- Commercial zone P.O.I

Differentiation points of
KT Floating population

Divide 24−hour moving patterns into day & night, mash−up various data, and

life−styling the moving pattern

kt

Floating population Platform

01
Total moving pattern of one day

02
Gather the home/office patterns by dividing data into day & night resident

03
Formalizing lifestyle, from *staying* and *moving* to *POI* and *commuting*

04
Mash−up IoT, credit card consumption patterns, SNS, public open data

Categorize moving patterns, using Floating population Platform

Classify job, leisure pattern by moving and staying frequency
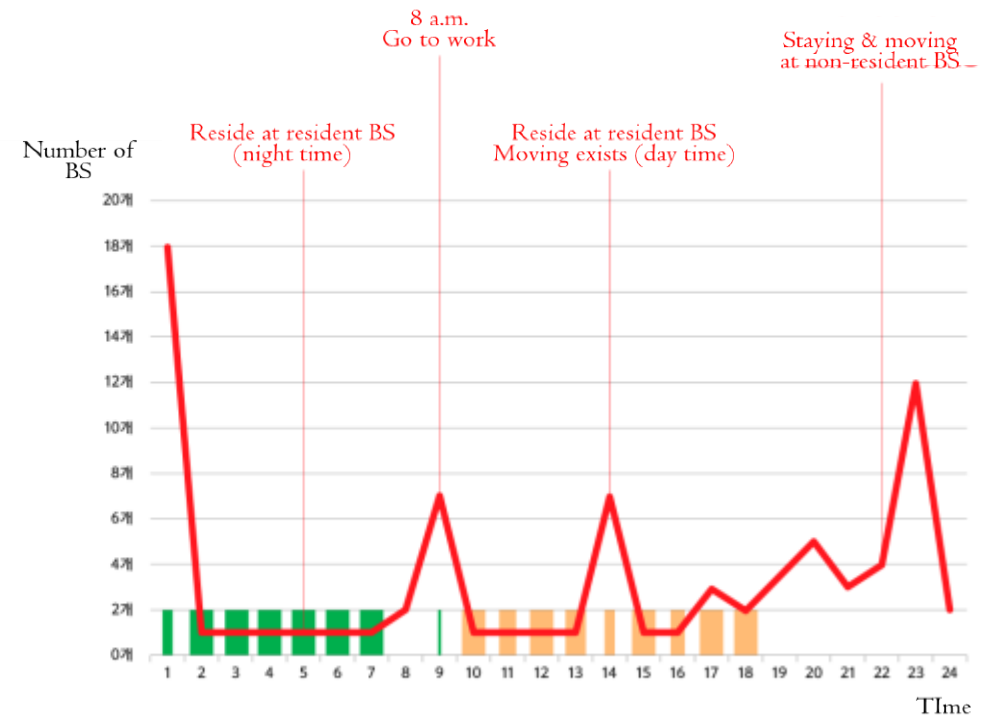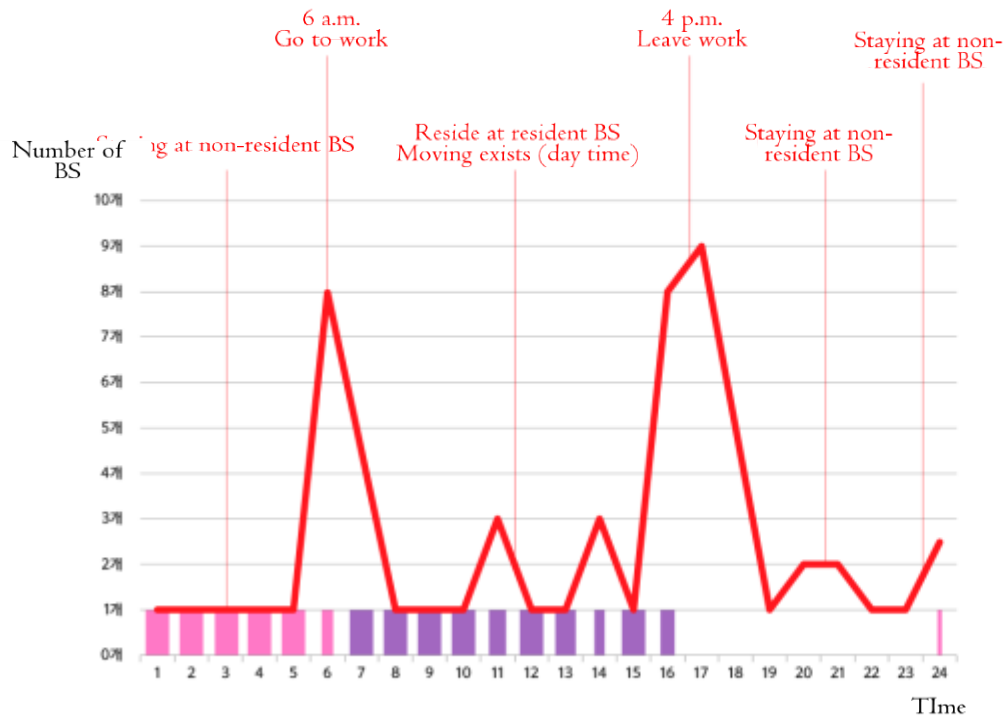Expand into consumption behavior, linking with Point of Interest(POI)

Patterns of job

commuter | salesperson | owner-operator | three shifts | part-time worker

Floating population Platform creates **Integrated-intelligence solution**

GrIP
Commercial zone analysis solution

Provide additional information
for floating population
and commercial zone analysis
- population and sales status
  for product development
- best spot for business and retail
- lifestyle recommendation

Mobile contents analysis solution

Analysis of customer tendency
per contents category
using mobile log data
- using status per customer pattern
- using status per contents category
- SNS analysis status per category

kt BigSight

Data store
- Open API
- Data set

TrIP
Tourism analysis solution

Analysis on floating population
based on telecommunication signal
- information about tourist status
- population status of major tourist spot
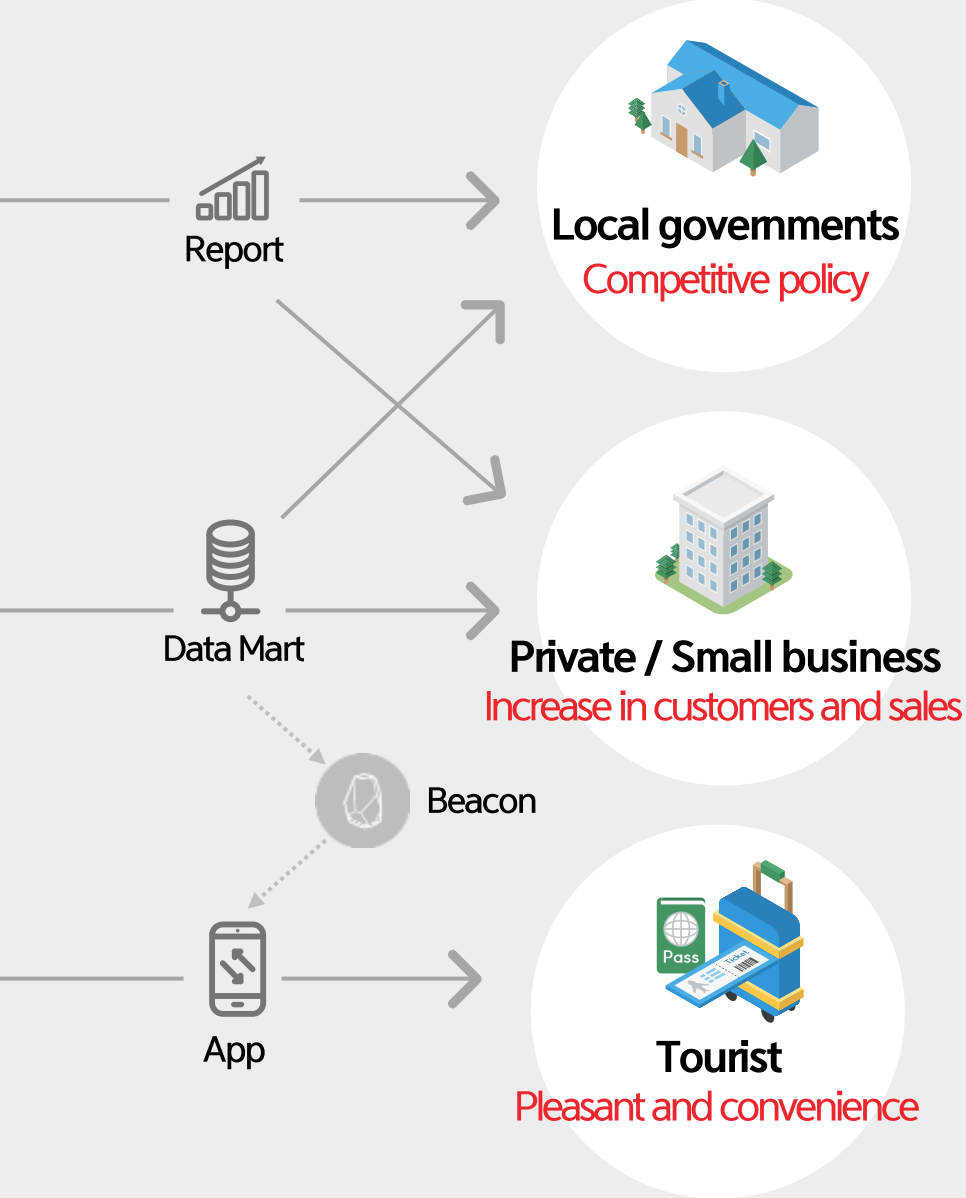- status of festival or event visitors

Tourism Solution

TrIP

Tourism Solution(TrIP) analyzes the spot and behavior of tourists, and then provides
the results to **local governments, tourist industry and tourists**

Big Data

Location Information
(LTE signal)

Wi-Fi

Beacon

Consumer information
(BCcard)

Behavior information

TrIP

Tour information
Tourist/Spot/Festival

정책이전 / 정책이후

Stay / Eat / See / Play / Buy

Competitiveness analysis
See/Eat/Buy/Stay/Play

Recommendation/ prediction modeling
Selecting hot place/festival area

Report

Data Mart

Beacon

App

Local governments
Competitive policy

Private / Small business
Increase in customers and sales

Tourist
Pleasant and convenience

Tourism Solution provides
reliable statistics, tourism consulting and IoT service

Statistics

Analysis report

Tourist Report
– Visitor status by gender/age
– Visitor status per month/week
– Staying period and percent of revisit

Tourist spot Report
– Visitor status by tourist spot
– Popular tourist spot Top 10
   based on the number of visitors
– New tourist spot Top10

Festival Report

Tourism consulting

5 Tourist industry criteria

See Optimizing tourist spot, city tour
Eat Restaurant industry analysis
Buy Consumption analysis
Stay Accommodation, parking problem
Play Festival, experience contents

local govern.A
Play & Stay

local govern.B
Stay (Best)

local govern.C
Eat & See
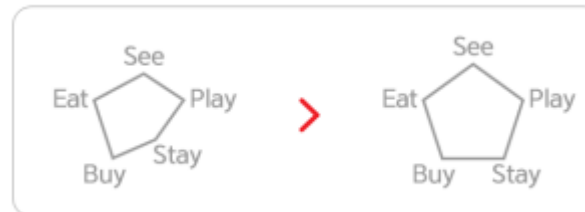
IoT marketing
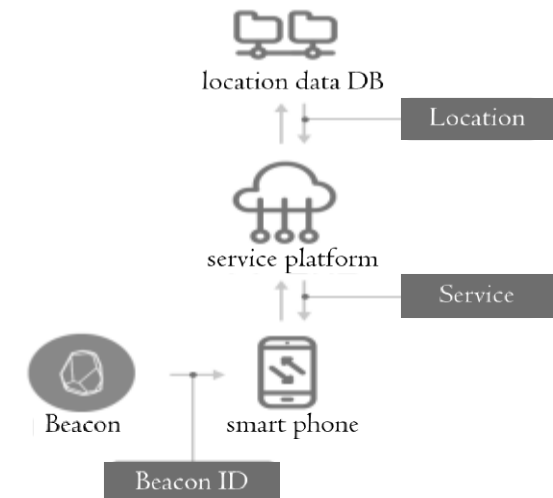
Beacon service

**Installation of beacon
         / building application**
– Tourist routes recommendation
– Curation of restaurant and tourist spot

Tour/festival analysis report
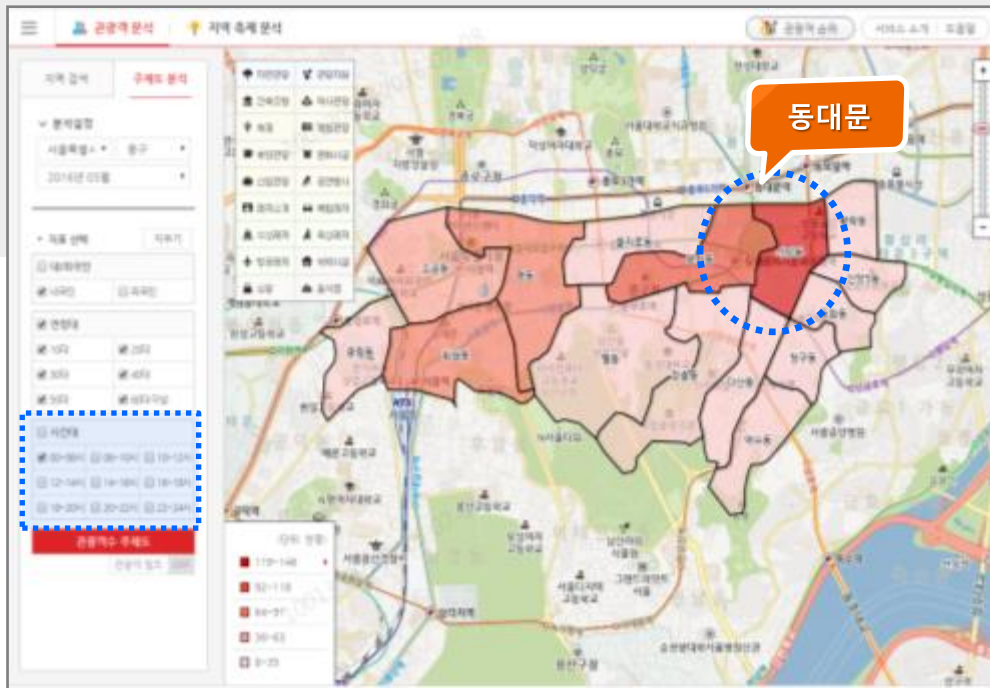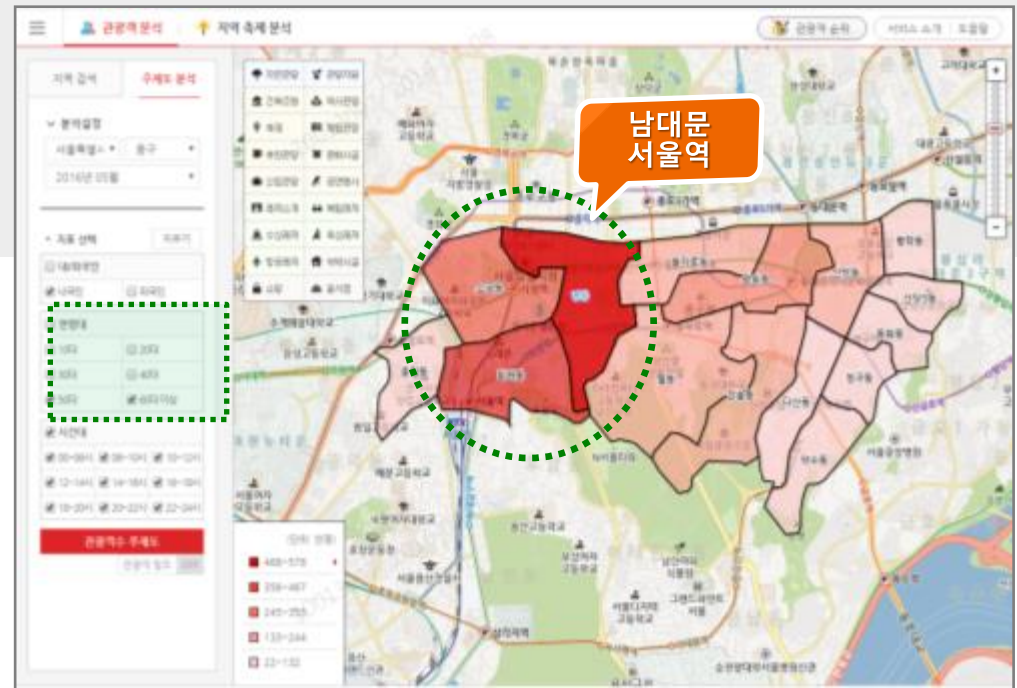– Detail route of tourists

location data DB — Location
service platform — Service
Beacon — smart phone
Beacon ID

can visually check various analysis and status, considering tourists' tendency

Tourist analysis by time

동대문

Tourist analysis by age

남대문
서울역

Q1 : In Seoul>jung-gu, where is the place that a lot of tourist go at night time?
- ▶ **Most tourists are placed at '신당동(동대문)' at night(00~06 a.m.)**
  - ➔ <u>Whole/retail sales are operated at night</u>, and tourists are increasing around '동대문'
  - ▶▶ **We need to expand convenient facilities for night tourists around '동대문'**

Q2 : In Seoul>jung-gu, where is the place that a lot of elderly go?
- ▶ **The elderly(over 50-60) are placed at '명동/회현동/소공동'**
  - ➔ with '명동', old aged are increasing <u>around '서울역 & 서울시청'</u>
  - ▶▶ **We need to establish marketing strategy, targeting the elderly at relevant place**

Thank you | **kt**