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GLOBAL CITY
TEAMS CHALLENGE

From Silos to Network

Taichung Intelligent Operation Center (IOC) Project

June 13, 2016

NIST
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Team Members

Taichung City, Taiwan

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Taichung Brief Introduction

Intelligent Community of the Year 2013

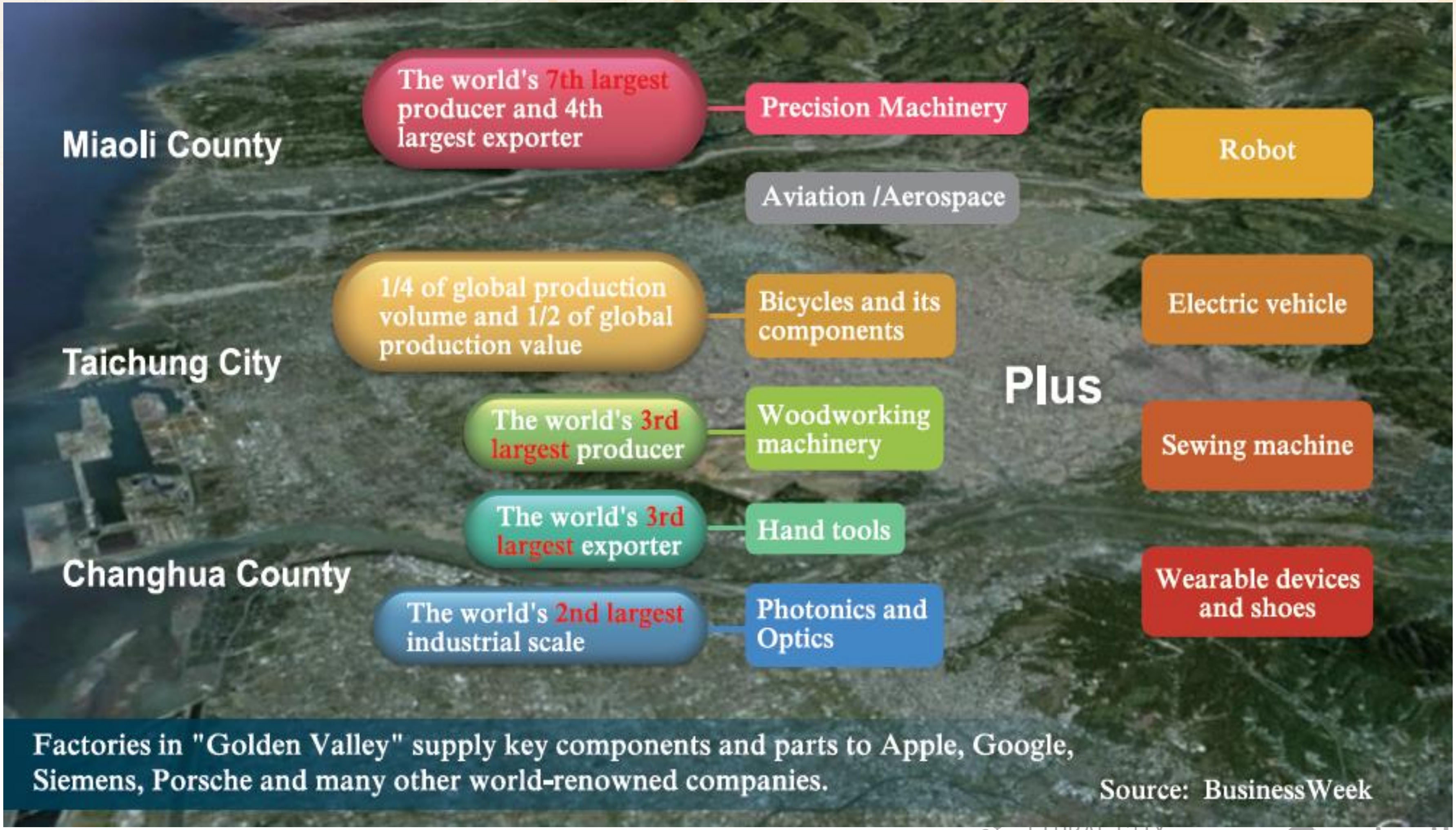
Profile

- Population: 2.74 million
- Area: 2,214.90 km2
- Population Density: 1,239 persons/km2

Employment Structure

- Primary industry: 3.75%
- Secondary industry: 39.01%
- Tertiary industry: 57.24%

Central Taiwan Technology Corridor



The world's 7th largest producer and 4th largest exporter	Precision Machinery
	Aviation /Aerospace
1/4 of global production volume and 1/2 of global production value	Bicycles and its components
The world's 3rd largest producer	Woodworking machinery
The world's 3rd largest exporter	Hand tools
The world's 2nd largest industrial scale	Photonics and Optics

Plus

- Robot
- Electric vehicle
- Sewing machine
- Wearable devices and shoes

Factories in "Golden Valley" supply key components and parts to Apple, Google, Siemens, Porsche and many other world-renowned companies.

Source: BusinessWeek

Our Challenges

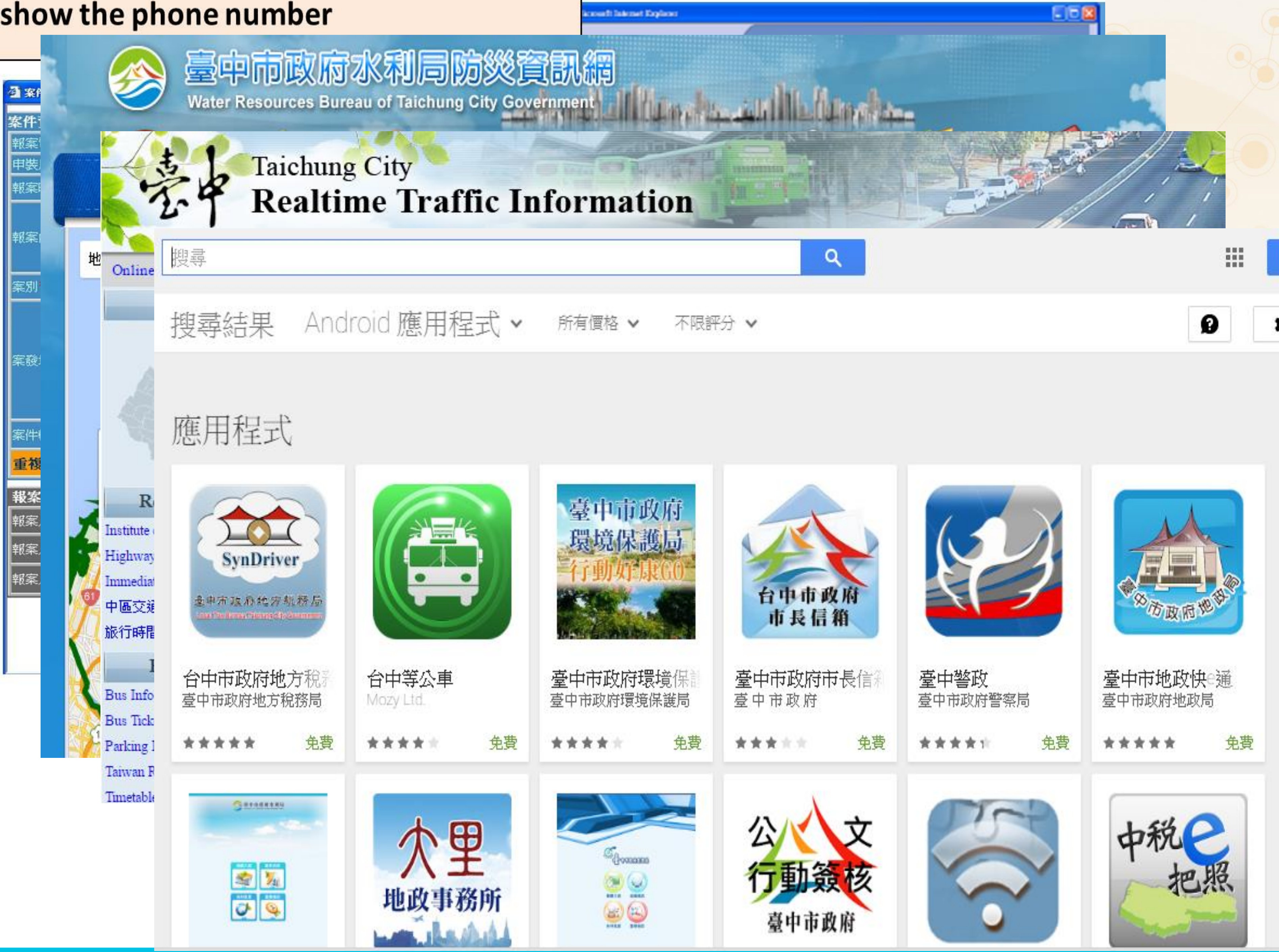
Over developed

Traffic congestion

Environmental pollution

Public safety

show the phone number



臺中市政府水利局防災資訊網
Water Resources Bureau of Taichung City Government

Taichung City
Realtime Traffic Information

搜尋

搜尋結果　Android 應用程式　所有價格　不限評分

應用程式

台中市政府地方稅
臺中市政府地方稅務局
免費

台中等公車
Mozy Ltd.
免費

臺中市政府環境保
臺中市政府環境保護局
免費

臺中市政府市長信
臺 中 市 政 府
免費

臺中警政
臺中市政府警察局
免費

臺中市地政快e通
臺中市政府地政局
免費

SynDriver
臺中市政府地方稅務局
臺中市政府
環境保護局
行動好康GO
台中市政府
市長信箱
臺中市政府地政局
大里
地政事務所
公文
行動簽核
臺中市政府
中稅e把照

From Silos to Network…

Taichung Intelligent Operation Center(IOC) Project

Taichung IOC

Disaster Prevention

Traffic Control Management

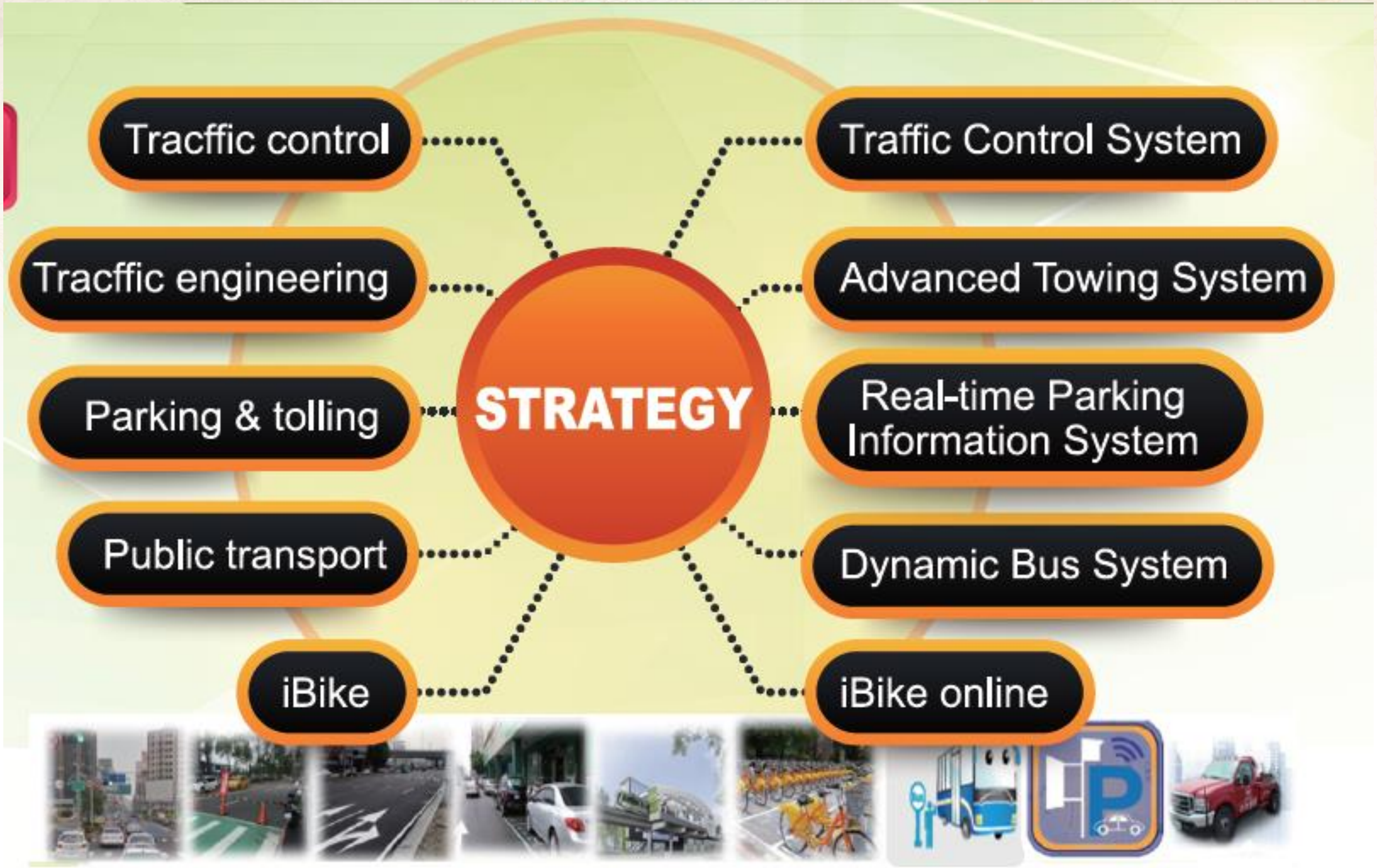
Emergency Response

Internal Communication Platform

External Citizen Service Integration

City Governance Support

Traffic Control Management Architecture

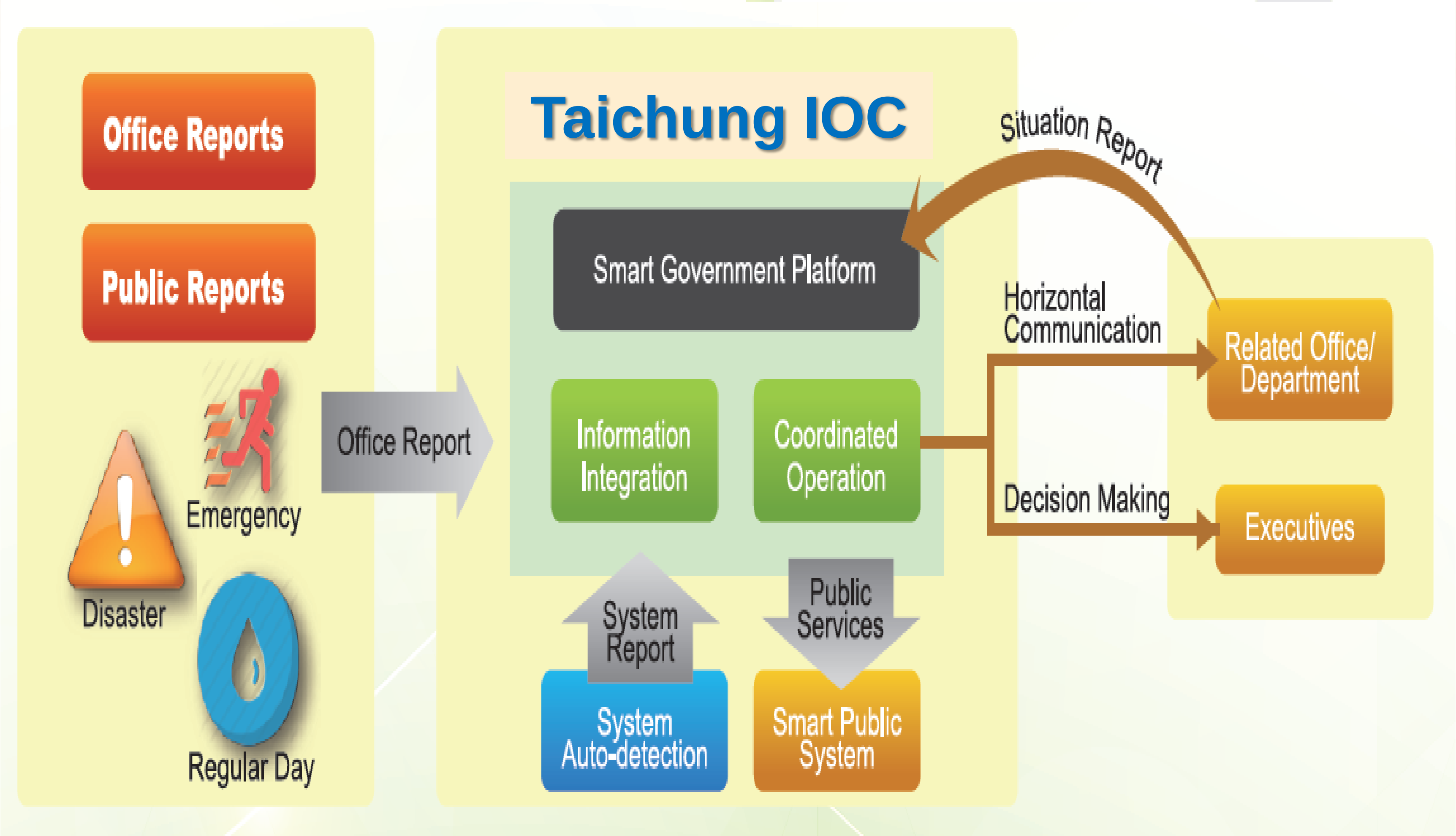


STRATEGY

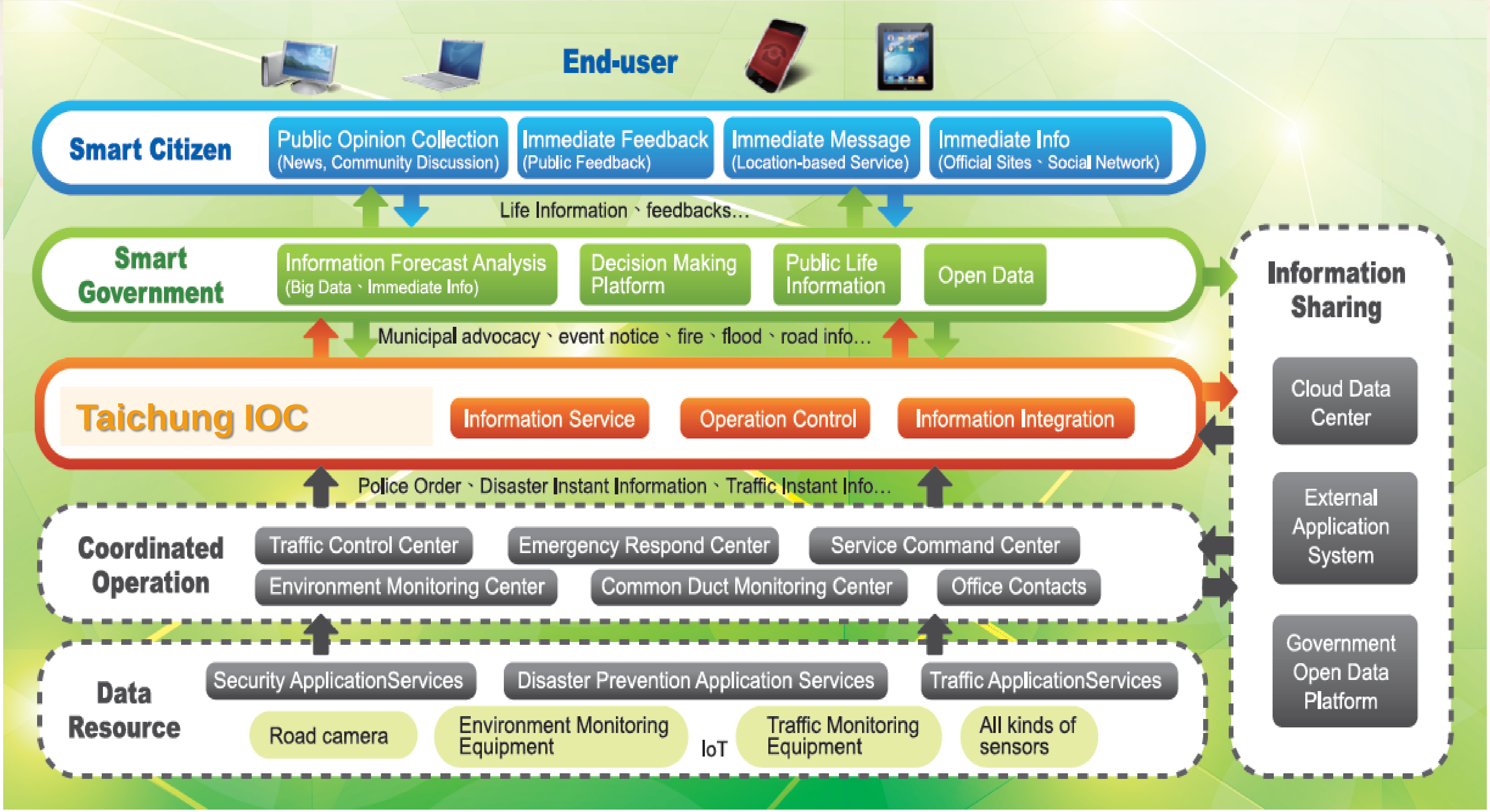
- Tracffic control
- Tracffic engineering
- Parking & tolling
- Public transport
- iBike

- Traffic Control System
- Advanced Towing System
- Real-time Parking Information System
- Dynamic Bus System
- iBike online

Operation Mechanism


Office Reports
Public Reports
Emergency
Disaster
Regular Day
Office Report
Taichung IOC
Smart Government Platform
Information Integration
Coordinated Operation
System Report
Public Services
System Auto-detection
Smart Public System
Situation Report
Horizontal Communication
Related Office/ Department
Decision Making
Executives

Information Integration Sturcture



End-user

Smart Citizen

- Public Opinion Collection (News, Community Discussion)
- Immediate Feedback (Public Feedback)
- Immediate Message (Location-based Service)
- Immediate Info (Official Sites、Social Network)

Life Information、feedbacks…

Smart Government

- Information Forecast Analysis (Big Data、Immediate Info)
- Decision Making Platform
- Public Life Information
- Open Data

Municipal advocacy、event notice、fire、flood、road info…

Taichung IOC

- Information Service
- Operation Control
- Information Integration

Police Order、Disaster Instant Information、Traffic Instant Info…

Coordinated Operation

- Traffic Control Center
- Emergency Respond Center
- Service Command Center
- Environment Monitoring Center
- Common Duct Monitoring Center
- Office Contacts

Data Resource

- Security ApplicationServices
- Disaster Prevention Application Services
- Traffic ApplicationServices
- Road camera
- Environment Monitoring Equipment
- IoT
- Traffic Monitoring Equipment
- All kinds of sensors

Information Sharing

- Cloud Data Center
- External Application System
- Government Open Data Platform

Performance Targets

- **Reduction of average response time to disaster by 50%**
- **Measurement Methods**
  - ✓ Typhoon seasons V.S. Baseline
  - ✓ Measurement between the reporting of occurrence of disasters and actions taken to the response to the disaster.

Project Status

- **Phase I Pilot/Demonstration in 2016：**
  - ✓ July 2016: Integration guideline to relating departments
  - ✓ November 2016: Prototype on pilot scale
- **Phase II Deployment in 2017：**
  - ✓ Real-time working application tied into city emergency response systems at city-wide scale, supporting over 50% of the city.

Smart and Connected Communities in Taiwan

Make systems smart and connected

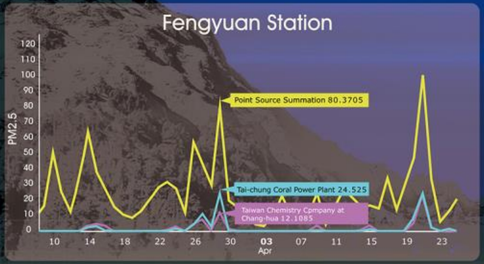
Automatic Vehicle Counting and Classification System

In order to alleviate traffic load, the AVCCS is proposed to count, trace, and classify vehicles in a city, and provide valuable information, such as predict traffic flow, optimize the time of traffic lights.

(AVCCS)

Big Data Visualization for Air Quality Management

This project is to use big data visualization associated with web service for assessment of air quality response in a city.



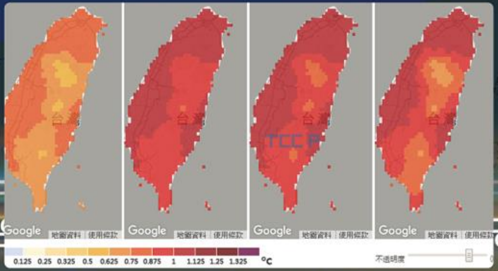
Machine Learning for Flood Detection

This project is to automatically predict the water level of the rivers and solve current problem in flood potential area in Taiwan. It also provides disaster prevention information for decision-making.

Yesterday
Today
Future
?
?

Taiwan Climate Change Projection and Information Platform (TCCIP)

TCCIP is one of the three major climate change projects funded by Ministry of Science and Technology. It collects climate change records over the past 100 years for research about impact assessments and adaptations in Taiwan.



Build Taichung a Livable Capital

Care for People

- Development Mission: People-Oriented, Sustainable and Energetic City
- Build Taichung a livable and immigrated city

Life@Taichung

大甲區
大安區
外埔區
后里區
清水區
神岡區
石岡區
東勢區
梧棲區
沙鹿區
大雅區
豐原區
潭子區
龍井區
西屯區
北屯區
新社區
大肚區
南屯區
北區
西區
東區
南區
太平區
烏日區
大里區
霧峰區
和平區

Thank You for Attention!

NIST

GLOBAL CITY TEAMS CHALLENGE

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