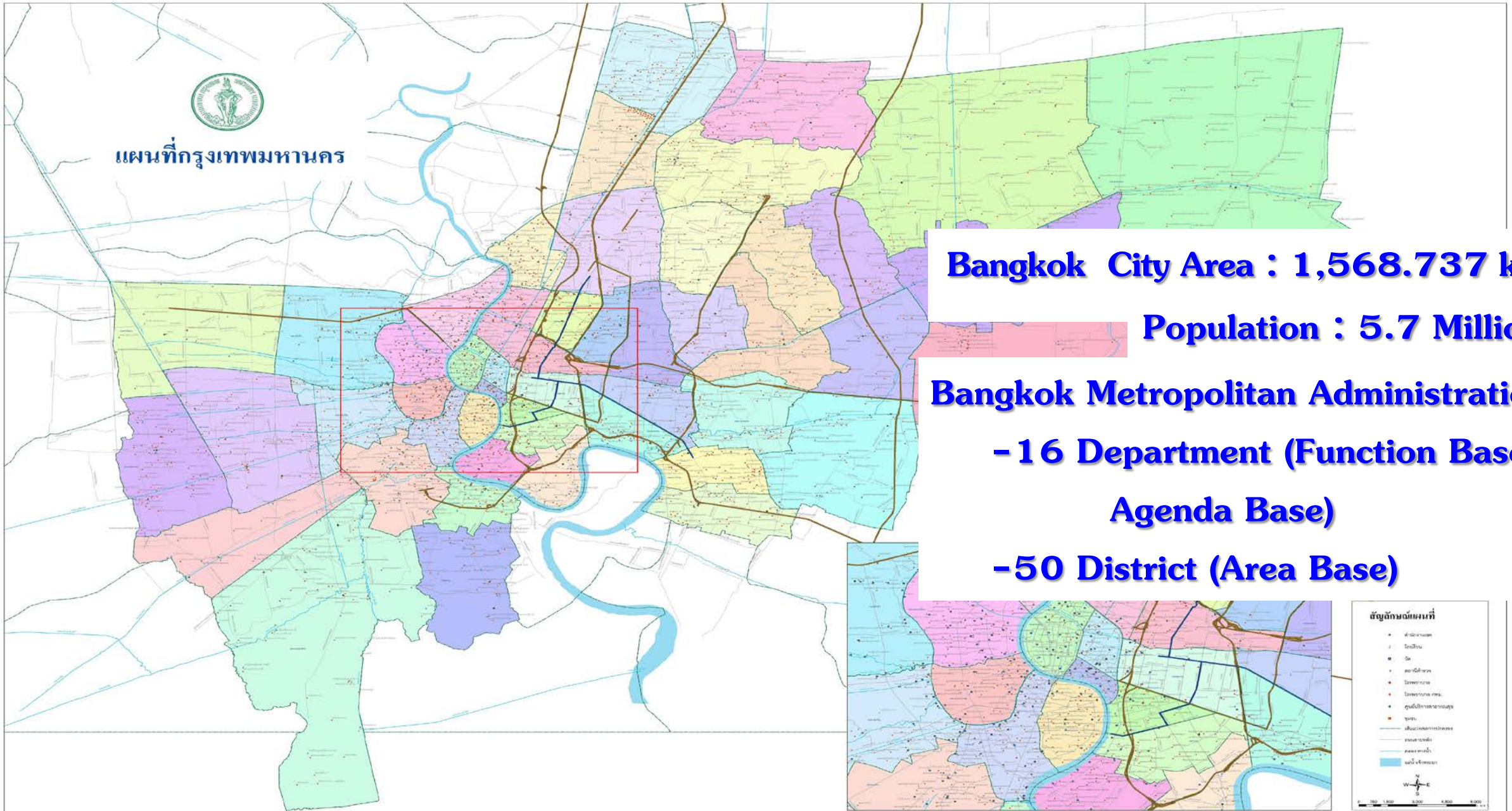# Integrated Data Hub
Bangkok Metropolitan Administration (BMA)

Mr. Prasopsook Pimpagovit

แผนที่กรุงเทพมหานคร

Bangkok City Area : 1,568.737 km^2

Population : 5.7 Million

Bangkok Metropolitan Administration

-16 Department (Function Base
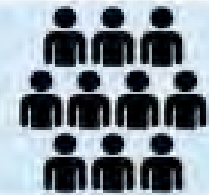
Agenda Base)

-50 District (Area Base)

IDH Background

1 Bangkok metropolitan area has been growing exponentially from a population of 1.6 million in 1986 to 5.7 million in 2019, converting the city not only into the biggest urban center of Thailand, but also one of the world's largest megacities

2 Large metropolitan areas need to be able to rapidly respond to a changing environment, while being able to deliver better services, be responsive to emerging crises whilst keeping pace with change, accomplish more with less resources and, be more transparent whilst protecting the privacy of its citizens

3 A significant amount of data is currently collected and used by departments within BMA, but there is insufficient coordination among them, and an absence of a centralised system that allows data consistency, reliability and quality

4 A centralised repository such as that enabled by an Integrated Data Hub (IDH) will enhance decision-making and lead to better quality analysis, considered critical to strengthening data monitoring systems, along with enabling coordination and data reliability
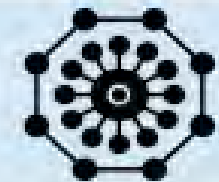
5 The Global Future Cities Programme will support BMA in designing and developing a roadmap for implementation of a world-class integrated data hub shaped to the specific requirements of Bangkok

IDH Conclusion

We understood the Challenges

- Bangkok metropolitan area has been growing exponentially and BMA must respond rapidly to a changing environment for sustainable development

- A lot of data is collected by different departments of BMA but it resides in siloes

- A centralised data repository is required to support effective decision making and integrated planning

We assessed Current State

- The current Data Analytics maturity score of BMA is relatively low 1.9 on a 1-5 scale

- The maturity assessment dimensions include Capability, Governance, People, Applications & Technology, and Data

- This maturity assessment is based on a study performed through 32 workshops and 16 interviews. Total 164 stakeholders were consulted. 85 questionnaires were filled and more than 450 observations were generated

We identified Future Needs

- 89 use cases were identified with a focus around sustainable development goals

- 13 of these use cases are at overall organisation level, 25 at inter-department and 51 are aligned to specific departments

- 61 of these use cases address more than 3 SDGs each

- Key development goals that are in focus include:
  - SDG 11: Sustainable cities and communities
  - SDG 3: Good health and well-being
  - SDG 9: Industry, innovation and infrastructure
  - SDG 8: Decent work and economic growth
  - SDG 15: Life on land

We propose Integrate Data Hub

- An integrated data hub is expected to provide consolidated, clean and harmonised data

- It should provide users an easy, quick and secure access to enable them to build identified use cases

- It is based on high performing, robust, secure, flexible and scalable architecture

- It is enabled through a strong Data and Analytics Organisation

- It is driven by streamlined Data Governance and Data Management process

IDH for BMA

Technological and operational foundation, that matches the need of BMA to establish IDH in future, needs to be laid down

▶

IDH will provide access to detailed, accurate and up-to-date data which is shared among departments, as well as with other external agencies/ universities/ stakeholders, that will be used in policy analysis and planning processes

▶

IDH will then contribute significantly to the overall goal of "making Bangkok inclusive, safe, resilient and sustainable"

IDH Output

Online Capacity Development

- **Basics of Descriptive Analytics**

- **Data Science**

- **Introduction to Big Data and Analytics**

- **Introduction to Big Data for Engineer**

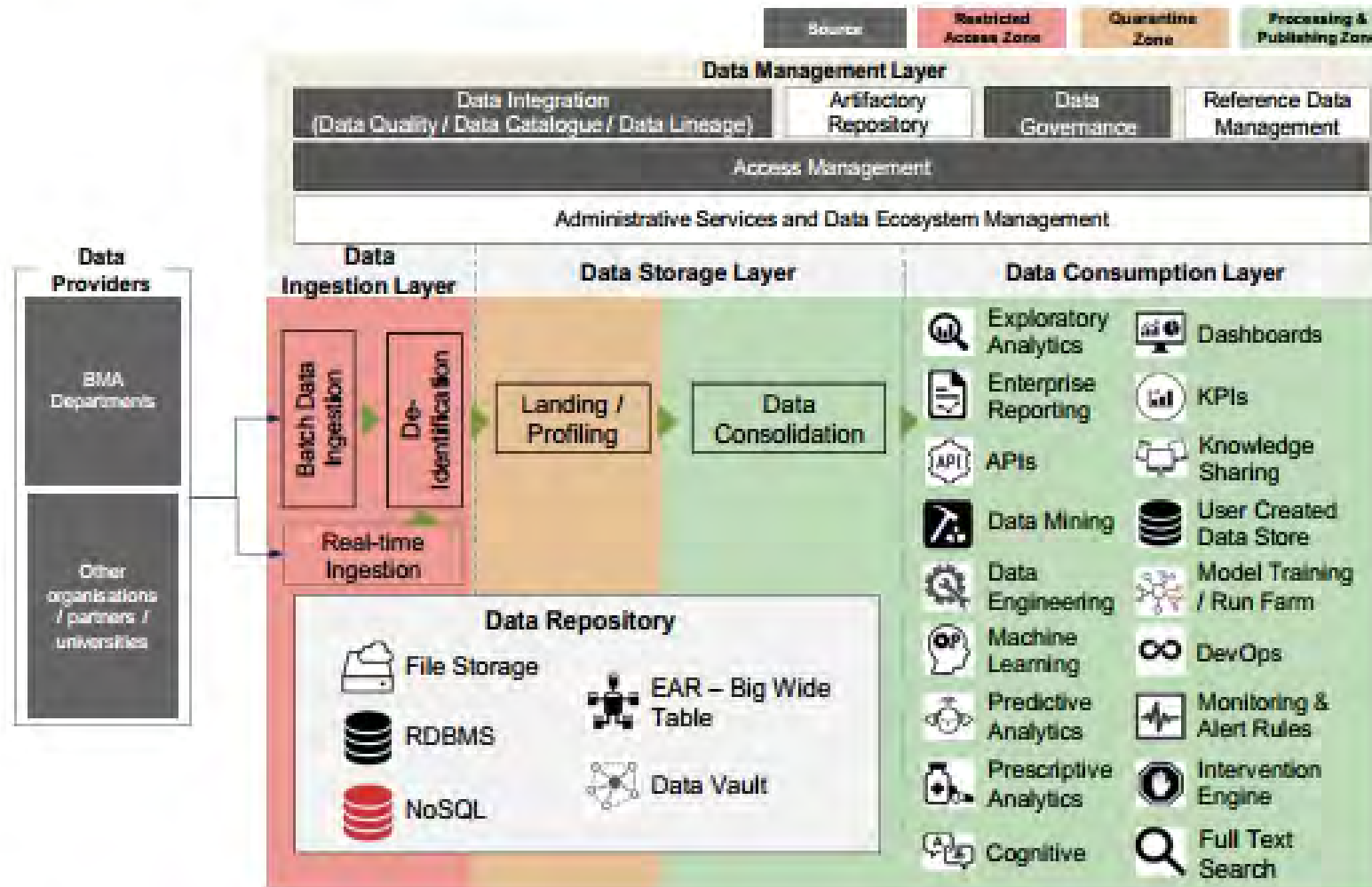- **Gender Equality and Social Inclusion (GESI) Workshop**

IDH Report

Integrated Data Hub Framework : BMA

The integrated data hub is expected to provide consolidated, clean and harmonised data to users in an easy, quick and secure manner. It will enable users to build the identified and future use cases

Encompasses the overall management and facilitation of the data ecosystem from a technical, business and data governance perspective

The conceptual architecture has been tailored to fit in-line with IDH business and technical requirements that support all kind of data such as structured, semi-structured, un-structured (image, voice, free text etc.)

With security as a touchstone principle, the system will be managed around restricted access zone (highly sensitive), quarantine zone (sensitive) and processing & publishing zone (non-sensitive)

The system has been designed to be robust, high performing, flexible and scalable to meet BMA's needs
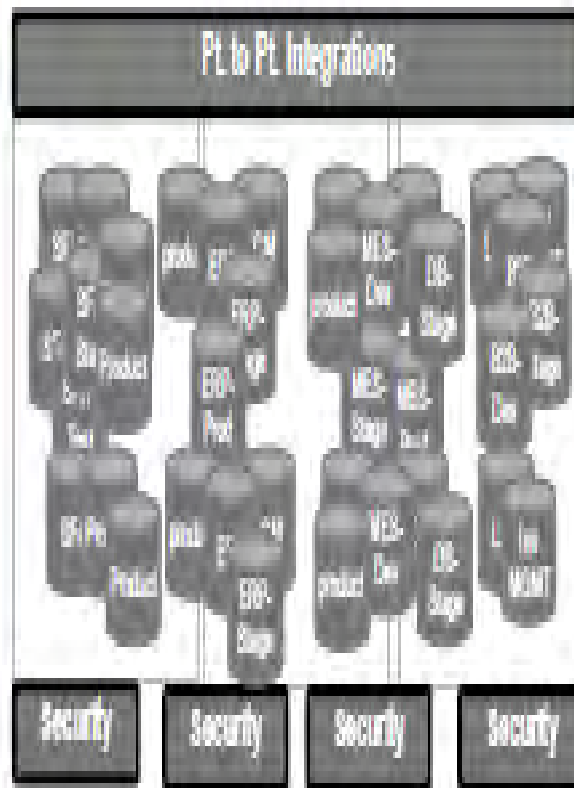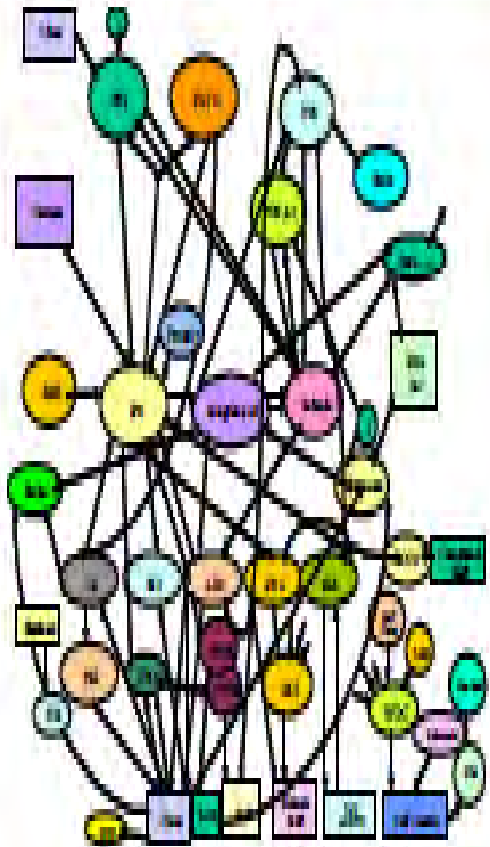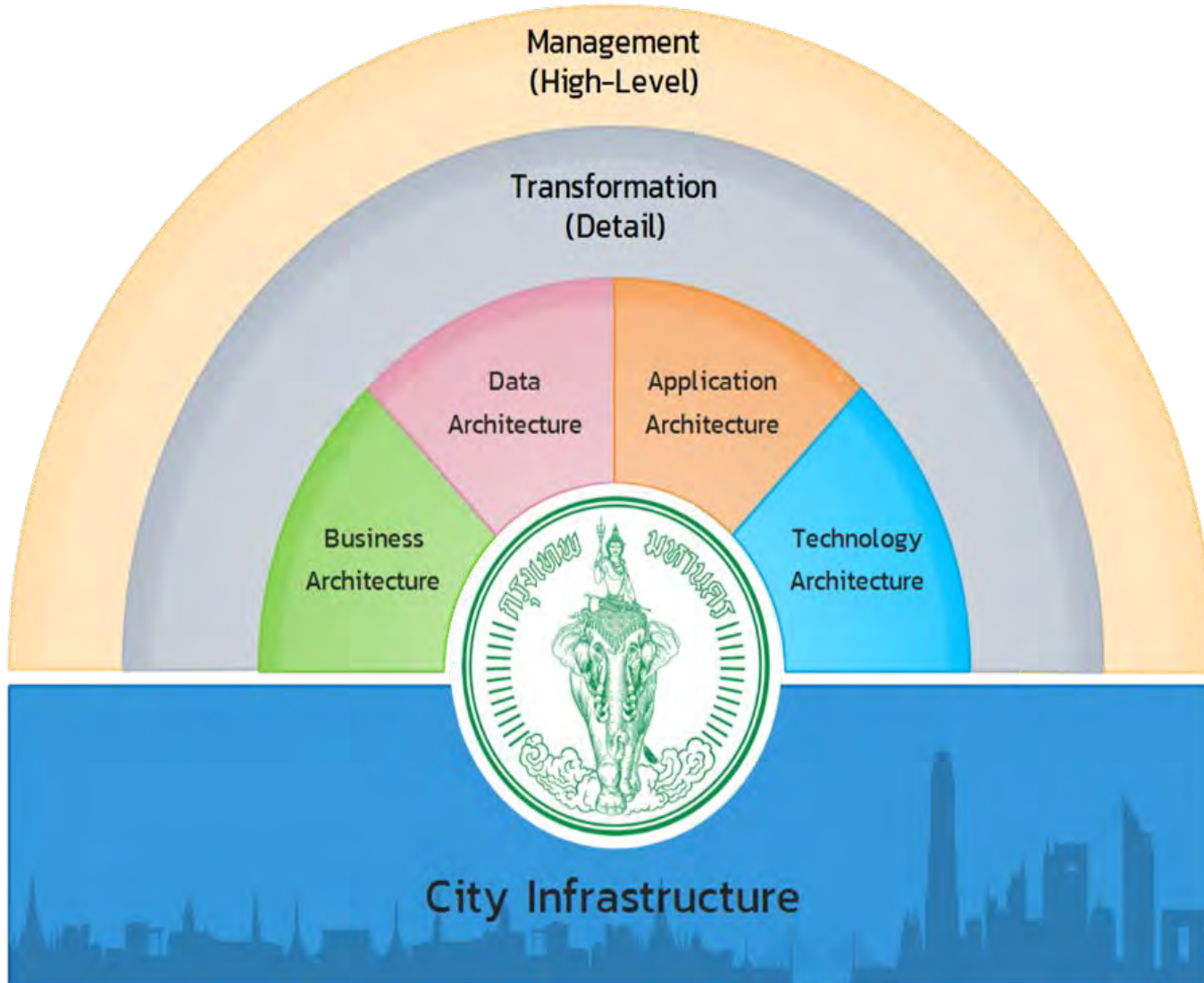
BMA Data Management Concept

BMA Enterprise Architecture Frameworks

Data Architecture

Data Governance Framework

BMA Data Governance Organization

Data Governance Committee of BMA

Strategy and Data Policy Working Group

Integration and data Security Working Group of BMA

Data Steward Working Group of BMA

Agency Working Group

Data Governance Working Group

Data Steward Working Group

BMA Data Governance Management

Data Governance : การกำกับดูแลข้อมูล

Accuracy   Completeness   Timeliness   Security   Privacy   Connectedness   Worthiness

Organization & Stewardship	Policy & Standard	Data Risk Management Compliance & Data Audit	Building Knowledge & Awareness
Function of • DG Committee • Steward team • Data Controller/Processor/User	• Data Management • Data Quality Assurance • Data Exchange	• Data Risk Management • Data Law & Regulation • Data Quality Audit	• Program Coverage • Measurement • Ongoing

Data Management : การบริหารจัดการข้อมูล

Data Lifecycle

Create → Store → Use → Archive → Destroy

Foundation

Data Catalog	Data Security & Privacy	Data Quality
• What data ? • Who's the owner ? • Search Tags • Data sources	• Confidentiality • Availability • Integrity	• Accuracy • Completeness • Validity • Uniqueness • Timeliness • Consistency

BMA Data Development Plan

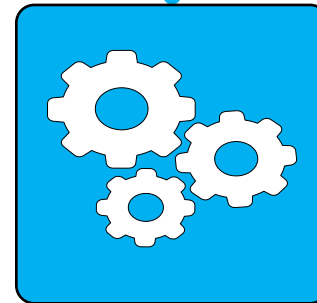**Create Data Standardize**

2020
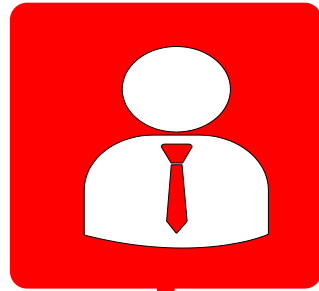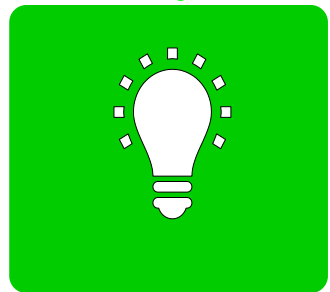
One Platform for Integrated dataset in department level

2022

2021

Data Standardize Department and District

2023

Data Service through Standardised API

Integrated Data Hub/BMA Enterprise Architecture/ BMA Data Governance

BMA Data Governance Policy and Standard

BMA
Data Catalog

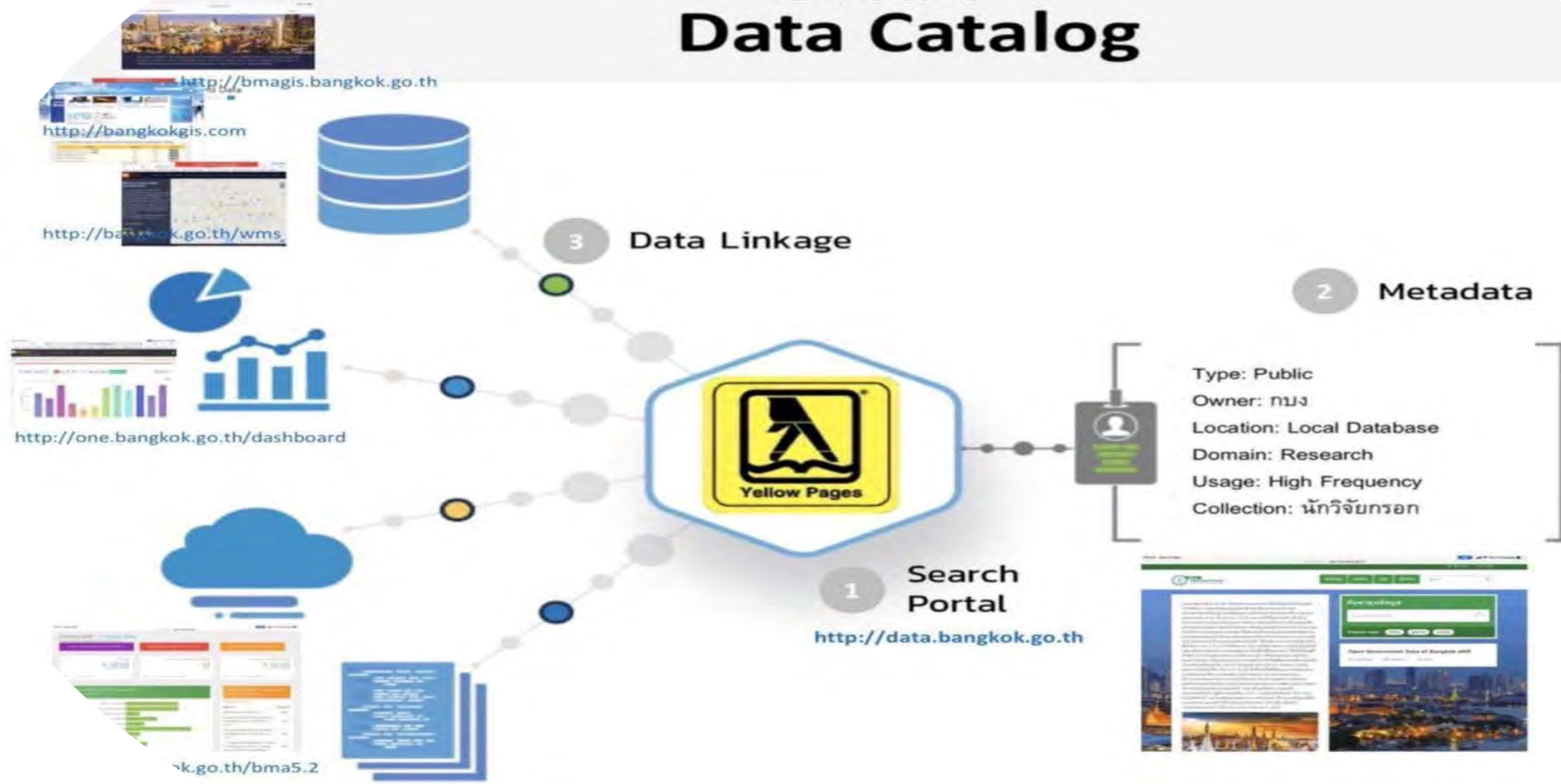http://bmagis.bangkok.go.th

http://bangkokgis.com

http://bangkok.go.th/wms

http://one.bangkok.go.th/dashboard

3 Data Linkage

2 Metadata

Type: Public
Owner: กทม
Location: Local Database
Domain: Research
Usage: High Frequency
Collection: นักวิจัยกรอก

Yellow Pages

1 Search Portal

http://data.bangkok.go.th

k.go.th/bma5.2

Data Government Platform

Form Paper

Information System

Excel Files
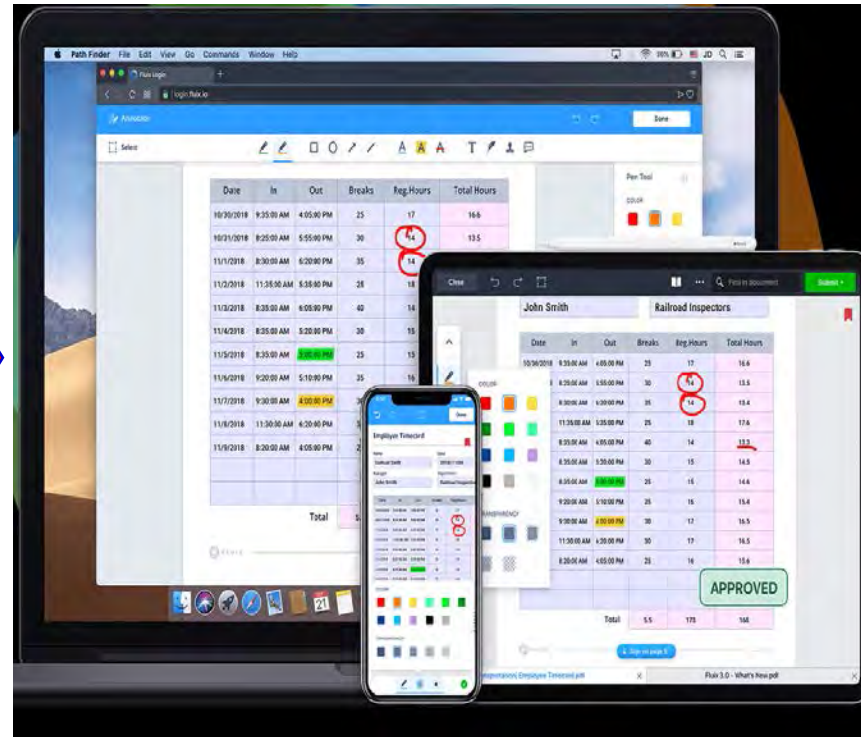
One Platform

BMA Data Center

BMA : Data-Driven Organization

Data Policy

| Compliance with Law | Data Reliability | Increased working Capability | Innovation data sharing | Transparency and Public Participation |
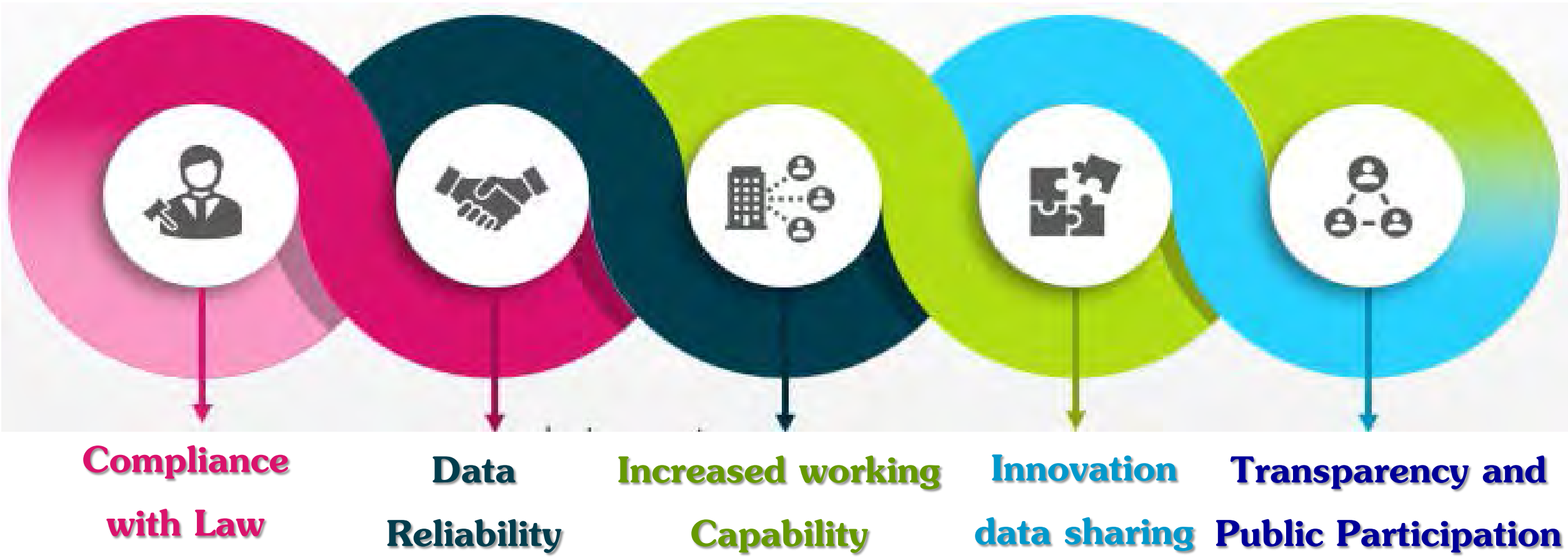
BMA : Data-Driven Organization

BMA Government Data Platform :

http://bmagis.bangkok.go.th/portal/apps/sites/#/data

This is the platform for exploring and downloading GIS data, discovering and building apps, and engaging others to solve important issues. You can analyze and combine datasets using maps, as well as develop new web and mobile applications. Let's achieve our goals together

BMA : Data-Driven Organization

BMA Open Data Platform : http://data.bangkok.go.th/

Integrated Data Hub
Bangkok Metropolitan Administration (BMA)

Thank you