SMART GOVERNANCE, URBAN DATA, AND ORGANIZATIONAL NEEDS TOWARD JAKARTA SMART CITY

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EDUCATION
• S1 ITB, Bandung - Indonesia (1986)
• S2 Meisei University, - Jepang (1994)
• S3 The University of Tokyo, Tokyo - Jepang (1998)

WORK/PROFESSIONAL EXPERIENCE
• Chairman of the Smart Indonesia Initiatives Association (2016 – present)
• Board of Commissioners of PT Kereta Api Indonesia (2018 – 2021)
• Member of Smart City Board of Bandung (2014 – present)
• West Java APRIKOM Advisor (2013 – present)
• Vice President International Academy of CIO Center at Waseda University Japan (2010 – present)
• Special Staff Of The Minister Of Communication And Informatics (2007 – 2009)
FROM CAPITAL TO NEW MODERN CITY
ABSTRACT

Jakarta's Future Development Concept is to become a city that can compete with other major cities, with the goal of making Jakarta the global business and economic centre. The city of Jakarta has a tagline, "A City for Everyone," with a planning focus on the built environment, economics, people, and governance. Various innovations are needed to support solving or challenging problems in Jakarta. One of the approaches Jakarta uses to solve problems is "smart city." The presentation will focus on how to provide urban infrastructure and smart governance for smart city implementations in Jakarta that focus on data integration and digital transformation. In addition, we will discuss on the smart city organization and collaboration to achieve the Jakarta Smart City goal.
Changes in Society Cause...

Physical City
The part of the city that is the main location for social, economic interaction. Provide environmental resources and carrying capacity.

Digital City
The part of the city becomes the living location of city data and information. Connect to the Physical City using a cyberphysical interface.

...changes in the structure of the city
THE CHALLENGES
SMART SOCIETIES
These are humans

These are animals

The world of humans

The world of animals

People have become educated, but have not become human.
CITIES CHALLENGES (MEASURABLES VIEW)

- Challenge of integration
- Challenge of scalability of capacity
- Challenge of responsiveness and timely
- Challenge of reliability
- Challenge of efficiency
- Challenge of service continuity (sustainable)

- Complexity of city problem is growing fast.
- In most cases, capacity of conventional solution cannot fulfill the capacity demand of city problem
- City need innovative solution that provide higher and scalable capacity of solution
- ICT (Information & Communication Technology) is potential enabler that enable innovative and effective solution and create high capacity of solution
- But, it should be noted that ICT is not the only solution, and Smart City is not equal to ICT city or digital city.
a city that can solve various city problems using **smart solutions** that utilize resources (especially technology) very efficiently to provide **smart services** that can **improve the quality of life**, supported by **cultural transformation efforts** towards a **smart society**
Smart City Model
Management Process View

Plan/design must include sustainable strategy

Plan/design, build/improve, operate, and monitor “service”

Monitor

Build/Improve

Operate

Plan/Design

- Smart Industry
- Smart Small Business
- Smart & Creative Startup
- Smart Tourism
  - Service 1
  - Service 2
- Smart Maritime
- Smart Mobility
- Smart Payment & Banking
- Smart Commerce
- others

Service Item

Service Cluster

- Smart Health
- Smart Education
- Smart Government (Public Services)
- Safe & Secure
- Smart Generation
- others

Plan/design, build/improve, operate, and monitor “enabler”

- Smart Energy
- Smart Water/Air/Land Management
- Smart Waste Management
- Smart Region Management
- others

Enabler

Services

SMART ECONOMY

Smart People

Smart Infrastructure, Technology & Environment

SMART SOCIETY

Smart Governance

SMART ENVIRONMENT

Resources
SMART CITIES ARCHITECTURE

Architecture View

Smart Life Cycle

- Sensing
- Understanding
- Acting

Service Result for Improve Quality of Life

Smart Services

Enablers of Smart Services

Smart Characteristic of Enablers

Smart City Community Innovation Center
DKI JAKARTA DEVELOPMENT CONCEPT AND PRIORITIES

Jakarta’s Future Development Concept

Become a city that can compete with other big cities in the world, with realize Jakarta as the center of global business and economy

JAKARTA: A CITY FOR EVERYONE

Planning Focus

- Built Environment
- Economic
- Human
- Governance

Source: DKI Jakarta Province Regional Development Plan (RPD) 2023-2026
STRATEGIC ISSUES DKI JAKARTA FOR 2023-2026

01. Disaster Resilience

02. Dynamic government and public service transformation

03. Inclusive Economic Resilience

04. A digital and community based sustainable city

05. Humans are healthy, competitive and equal

06. Equitable development
JAKARTA SMART CITY 4.0 FRAMEWORK

City data is recognized as a significant asset for the deployment of SC data impact multiple service in various inter-disciplinary domains

Providing secure, reliable, and fast integration based on API (Application Program Interface) public services to citizens

Jakarta has created digital platform that are ready to be used for city Co-creators (e.g. communities, industries and start-ups)

Integration of various data platforms from different services

Building new business models for SC ecosystems instead of depending on financial restrictions (e.g. APBN/APBD)
DIGITAL TRANSFORMATION

The process of transitioning services from the old to the new by taking advantage of opportunities to use digital technology as much as possible appropriately to result in significant performance and efficiency improvements is known as digital transformation.

New Digital Technology

- Big Data and Real-Time Analytics
- Cloud Technology
- Artificial Intelligence and Machine Learning
- Augmented Reality
- Internet of Things
- API Based Integration
- Robotic Process Automation (RPA)

Information Technology

1. Utilizing new technology to get new, higher values
2. Potential use of Information Technology for automation of various business processes (standard value, but still must be done)
DIGITAL TRANSFORMATION FRAMEWORKS

GARUDA DIGITAL TRANSFORMATION FRAMEWORK

A. PREPARE TRANSFORMATION READINESS

B. DEFINE DIGITAL VISION & STRATEGY

C. IDENTIFY TRANSFORMATION OPPORTUNITIES

D. DIGITAL TRANSFORMATION REALIZATION

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DIGITAL TRANSFORMATION TO SUPPORT JAKARTA SMART CITY

Digital Transformation Enabler

- **People**
  - Digital Leadership
  - Digital Literacy
  - Resource and Support Commitment

- **IT Governance and Management**
  - Vision & Strategy
  - Organization Structure
  - IT Capabilities
  - Digitalization Stage (Digitation, Digitalization, Transform)
  - Inclusivity

- **Infrastructure & Technology**
  - Connectivity
  - Infrastructure
  - Integration Platform
  - New technology

- **Data Governance & Management**
  - Data Governance and Management Policies, Procedures, and Standards
  - Data Organization

JAKARTA SMART CITY

1. Smart Mobility
2. Smart Environment
3. Smart Economy
4. Smart Living
5. Smart People
6. Smart Governance
7. Smart Branding

Figure 14. Garuda Digital Transformation Framework
Figure 15. Digital Transformation Enabler

31/03/2023
THE LINK BETWEEN SDGS AND THE 3 DIMENSIONS OF SUSTAINABLE DEVELOPMENT

ISO FOR SDG’S AND SMART CITIES

ISO 37101, Sustainable development in communities — Management system for sustainable development — Requirements with guidance for use

SUSTAINABLE CITIES & COMMUNITIES

ISO 37120
Indicator for City Services & Quality of Life

ISO 37122
Indicator for Smart Cities

ISO 37123
Indicator for Resilient Cities

ISO/IEC 5087 Series of City Data Standards

- **Service Level (5087-n)** spans concepts commonly associated with a particular service but still shared with other services, such as Vehicles and Transportation network. *Can be read by multiple services but updated only by one service.*

- **City Level (5087-2)** spans concepts that are general to cities and span all services such as Households, Services, Residents. *Can be read and updated by multiple services.*

- **Foundation Level (5087-1)** spans very general concepts such as Time, Location, and Activity, upon which other levels are based.
URGENCY OF DATA GOVERNANCE

Data is an asset, 'data as currency', 'data as life blood', and 'the new oil'

Organizational actors are aware of the problems regarding data that continue to emerge
DATA GOVERNANCE MODEL (DAMA DMBOK2)

- To break down data silos in the Jakarta Smart City.
- Aims to harmonize data through a collaborative process involving stakeholders from multiple business units.
GOVERNMENT DATA

- **Public**: Data in this category typically has been approved for public access and or intended for public disclosure

- **Internal**: Data in this category is typically non-sensitive information that is not released to the public. Intended for use within the DKI Jakarta Provincial Government and authorised third parties

- **Private / Confidential**: Data in this category is typically sensitive information intended for use by a specific group, organisational unit, named individuals, roles, positions within the DKI Jakarta Provincial Government, and authorised third parties
## DATA INTEGRATION FRAMEWORK FOR FUTURE JAKARTA CITY

### Engagement
- **Jaki-Gov**
- **Jaki-Care**
- **Jaki-Citizen**
- **Jaki-Business**

### API

### Transaction
- **Penyedia Layanan Adm. Pemerintahan**
- **Payment Dompet Digital**
- **Penyedia Layanan Publik**
- **Analytics**

### Data

### Data Integration

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**Lembaga Finansial**

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INTEGRATED FRAMEWORK FOR PERIODICAL DATA COLLECTION JAKARTA CITY

SENSEING
- Data Acquisition
- Security Layer

UNDERSTANDING
- Data Lake/Data Warehouse
- Security Layer
- Data Analytic
- Security Layer
- Data Model Management
- API

ACTING
- End User Presentation Layer
  - Reporting and Notification
  - Device Controlling
  - Visualization Dashboard

DATA STEWARDSHIP

External data resources
- Waze BMKG (other entity) Etc.

Internal Data Resources
- Local System
- Local Database
- OPD Etc.
One platform for your daily needs in Jakarta

From reporting the city's problems to checking today's groceries prices, find all you need in Jakarta super-app.
The Jakarta Smart City Unit performs the following duties:

- Smart City Unit Function
- data management function
- Data Analysis Service Function

Meanwhile, the DKI Jakarta Provincial Communication, Informatics, and Statistics Office (Diskominfotik) will perform the following functions:

- ICT Unit Function
- Data Governance Function

Organizational changes for the Jakarta Smart City Unit are carried out to increase the value given to the business, improve performance and obtain an agile management organization for developing the smart city itself and the DKI Jakarta Province needs.
The future city hub is a collaboration space for developing innovative urban solutions for Jakarta. It is hoped that co-creators and collaborators can jointly develop a sustainable smart city ecosystem for Jakarta residents.

The integration required is not only related to data and information; it also integrates various stakeholders.

The concept of city 4.0 aims to improve active participation and engagement of city co-creators, such as city stakeholders and residents, in building a better Jakarta.
These three schemes are ideal ones for partnerships to be able to develop smart cities in DKI Jakarta, where financing does not depend on the government's APBD so that they can be flexible if there are changes according to the required city conditions.
SMART CITY IMPLEMENTATION FOR DKI JAKARTA

SMART CITY PILARS & PRINCIPAL

To achieve

OUTCOMES

TOPICS

CONSIST OF SEVERAL PROJECTS

INITIATIVES / PROJECTS

The Future Smart City Vision

PENEDIC PROOF CITY
RESILIENCE TO CRISIS CITY
DIGITALLY ADVANCE CITY
SUSTAINABLE & LIVABLE CITY

SMART SERVICE ROADMAP

SMART CITY Pillars

SMART GOVERNANCE

To create a good smart city governance and improve government performance. Realizing an effective, efficient, accountable, and transparent government in providing services to the community.

SMART ECONOMY

To improve the city’s economy by utilizing various resources owned by the city through innovations and increasing business opportunities to improve the city community’s economy and improve community’s welfare.

SMART ENVIRONMENT

To create a sustainable city environment. It is livable with good environmental conditions and can provide a comfortable environment free from air, water, soil, and waste pollution, as well as environmentally friendly energy.

SMART PEOPLE

To build quality human resources to build a safe, comfortable, and sustainable Jakarta province.

SMART MOBILITY

To facilitate mobility in the city area, especially the movement of vehicles. Through smart mobility, the community is given easy access to transportation from one point to another and minimizes traffic jams in the city area. Not only convenience but also increasing security in accessing public transportation services.

SMART LIVING

To provide basic services to the community, such as education, health, security, comfort, and so on.

SMART BRANDING

To build the city’s image so that it is easily recognized by the public and provides convenience in improving the quality of life of the people in the city area.
Use Case Study “Healthcare”

- **Conditions of Health Care**
  1. Health facilities that are not up to standard and inadequate
  2. Lack of human resources so that there are many limitations in providing services
  3. The service system has been carried out online and offline
  4. Telemedicine has been implemented but has not been effective
  5. Patients can reach 100 patients / day
  6. Too many patients cannot be accommodated because the place is not up to standard, so an online queuing system is needed
  7. Services are scheduled and limited to 30 people/day

- **Problem**
  1. To build more puskesmas/health facilities and their supporters, including health workers, will require a lot of energy (time, money).
  2. Patient data is a sensitive matter that must be protected so there is a need for governance of the use and exchange of data (paying attention to various aspects in the DAMA DMBOK V2 as a framework). The data must be integrated with data at the DKI health office and government hospitals
  3. Patient registration depends on the Admin Hotline so that the possibility of unrecorded data is very large
  4. There is no system that automatically accommodates patient registration data and automatically generates scheduling data
  5. Prospective patients cannot know the situation in the health facility in real-time (queues, number of patients, etc.)
  6. The Hotline system is still very dependent on admin availability

- **Initiative**
  **TELEMEDICINE**

  “Utilize Information Technology to expand achievements without having to add new facilities”

- **Indicators**
  1. Health services carried out and directed to increase access and service quality. In terms of primary health services directed at promotive and preventive service efforts, through a continuum of care approach and health risk-based interventions both in clinical governance, management governance and program governance.
THANK YOU