UNIVERSITAS INDONESIA

FACULTY OF COMPUTER SCIENCE

The Shape of Smart Cities in Indonesia

Presented at:

2019 SCSE – AI Technology, Application and Innovation for Digital Cities

Teipei, Taiwan, 27 March 2019

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- ISO27001 (Information Security Management System) Lead Auditor
- *ISACA (Information Systems Audit and Control Association) Academic Advocate*
- Secretary of Academic Senate Universitas Indonesia
- Member of *e-Government* Lab, Faculty of Computer Science, UI
- Member of PANDI (.id Registry)
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- *Vice Chair ISOC (Internet Society) Indonesia Jakarta Chapter*
- *Academic Advisory Council APIDE (The Asia Pacific Institute for Digital Economy)*
- *Member of DIODE (Development Implications of Digital Economies) Strategic Research Network*
- *Resource Person for 100 Smart Cities Movement of MCIT the Republic of Indonesia*
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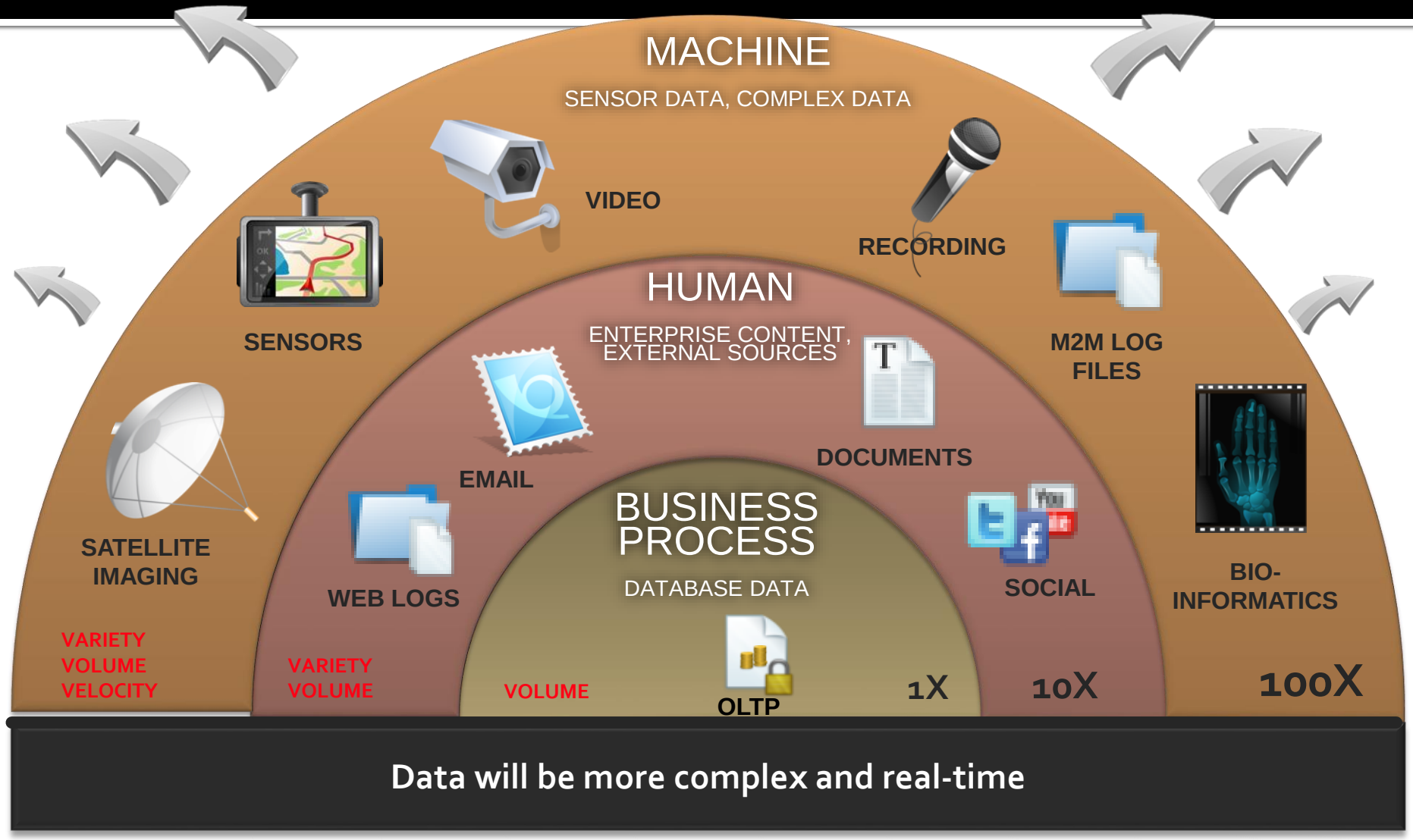
Agenda

- Digital Future
- Jakarta Smart City
- Digital Competency and Literacy
- Digital Divide

Digital Future?

According to UN

Big Data


MACHINE
SENSOR DATA, COMPLEX DATA
VIDEO
RECORDING
SENSORS
M2M LOG FILES
HUMAN
ENTERPRISE CONTENT, EXTERNAL SOURCES
EMAIL
DOCUMENTS
SATELLITE IMAGING
BUSINESS PROCESS
DATABASE DATA
WEB LOGS
SOCIAL
BIO-INFORMATICS
VARIETY
VOLUME
VELOCITY
VARIETY
VOLUME
VOLUME
OLTP
1X
10X
100X
Data will be more complex and real-time

Internet of Things (IoT)

SURABAYA CITY

Command Center
(IoT + Spatial + Big Data + 5G + AI)

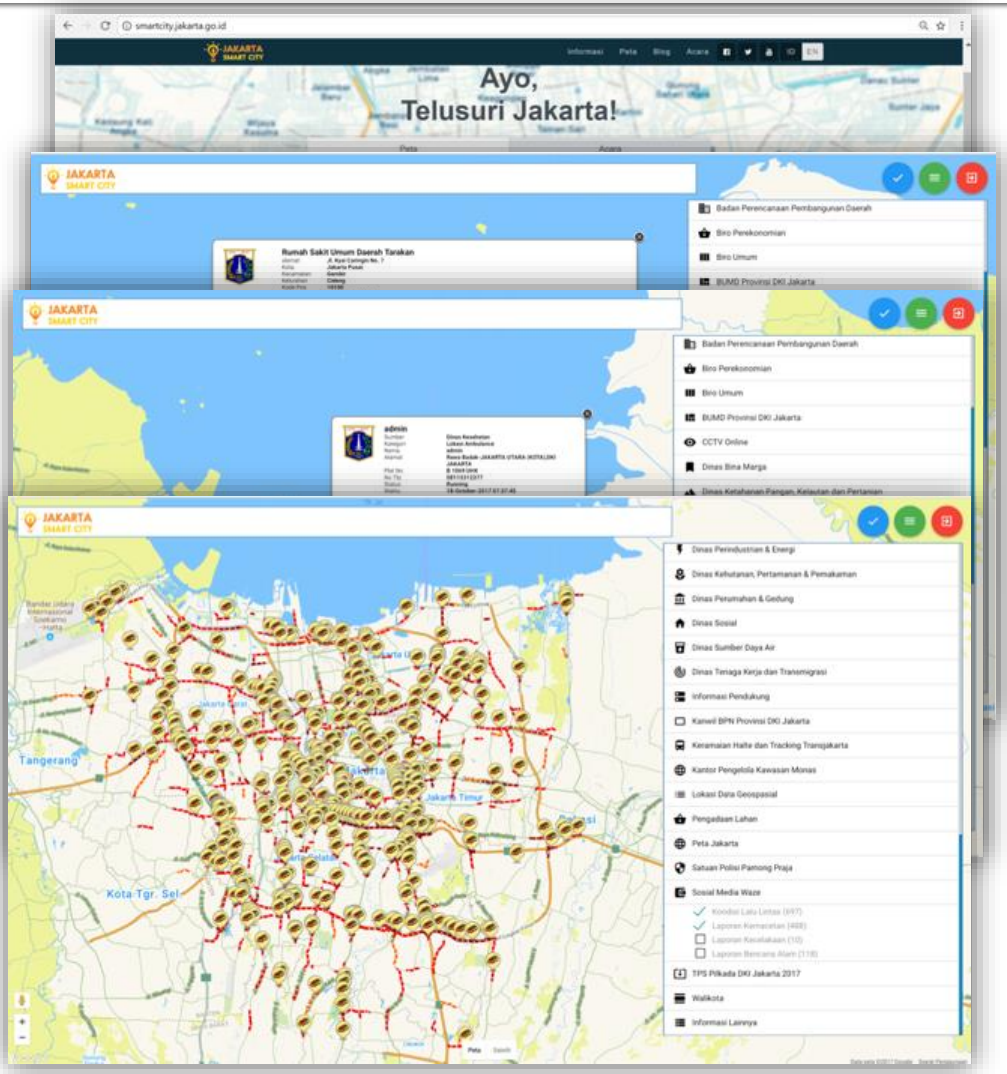
Jakarta Smart City

About Jakarta Smart City

- Established in 2015
- **Vision**
  - Jakarta as the capital of Indonesia is safe, comfortable, prosperous, productive, sustainable and globally competitive;
- **Mission**
  - Improving the quality of infrastructure, strengthen the economy, social and cultural cohesion, improving the environmental conditions and the efficient use of natural resources, improving government performance, strengthen innovation and creativity

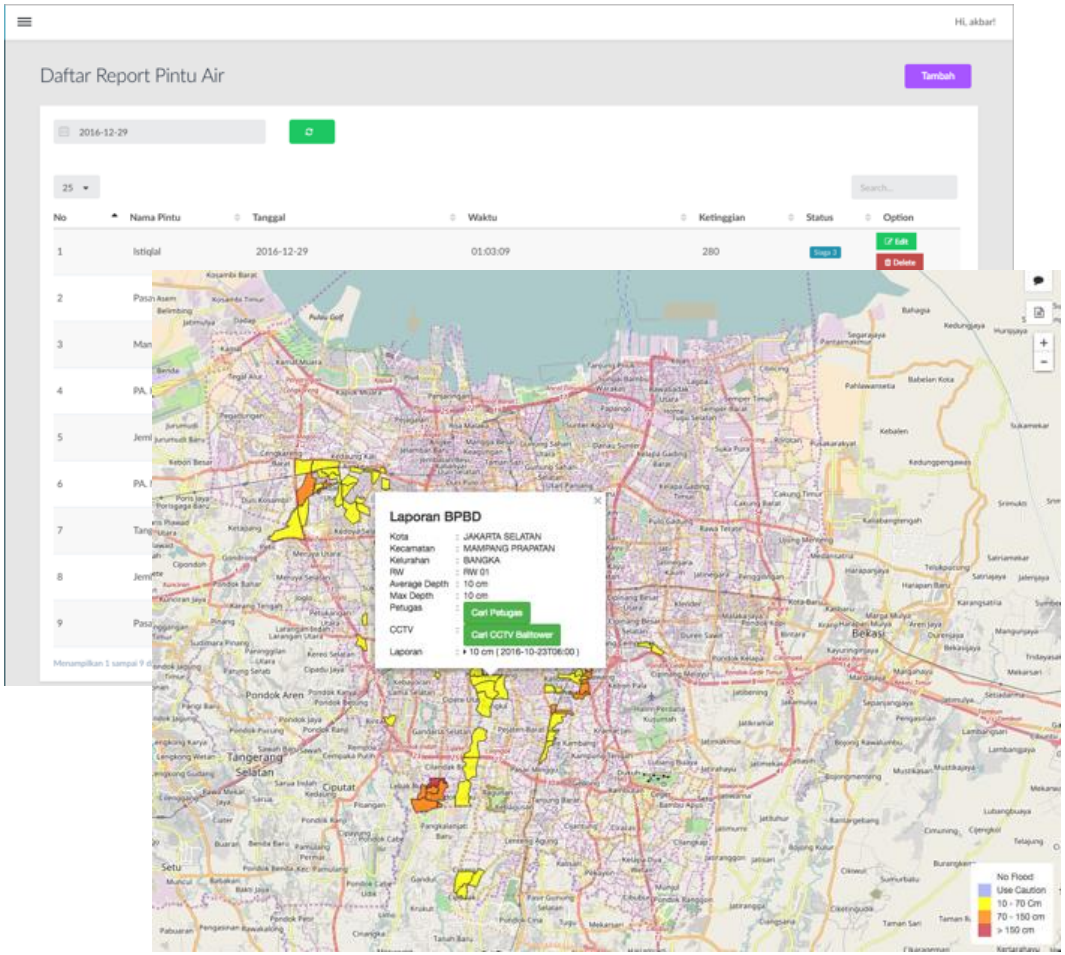
Features:
Citizen Relationship Management

Features: Smart City Maps smartcity.jakarta.go.id/maps



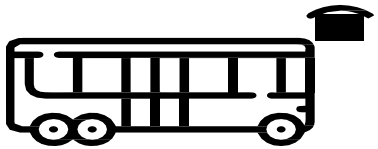
- Map-based data integration across agencies – *Open Government*
  - Real-time data feed from more than 7000 CCTVs
  - SMEs that are supported by Jakarta Government
  - Land prices information
  - Hospital rooms availability
  - Food prices

Features:
Flood Monitoring

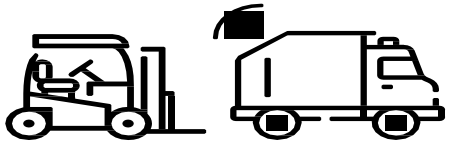


- Flood Maps
- Flood Report from Citizens
- Water Pump Conditions
- Post Conditions Observation
- Flood victims
- Donation amount

Features: IoT for Monitoring and Controlling

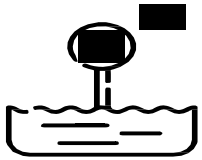


Monitors TransJakarta Buses



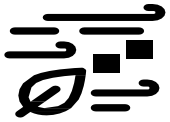
Monitors Garbage truck and Heavy Duty Vehicles

Monitors Ambulance

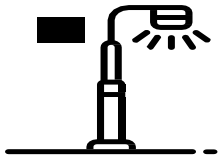


Monitors Water Level

7362 CCTVs



Monitors Air Quality



Controls Public Street Lights

API Jakarta

- Startup can use Jakarta API to develop applications

api.jakarta.go.id/

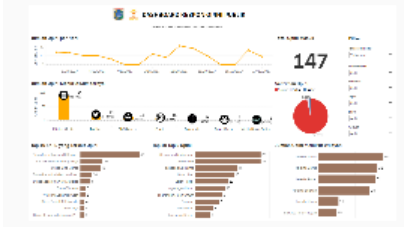
Fire Station Data

Hospital Data

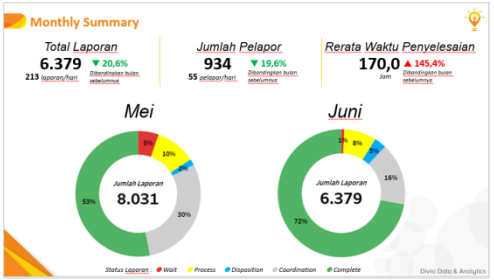
Ambulance Data

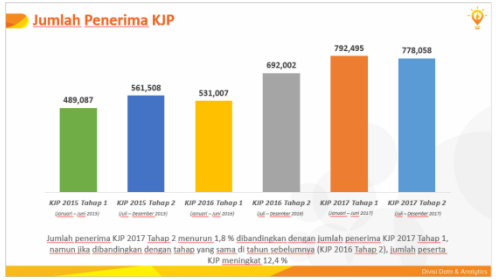
Waste Disposal Data

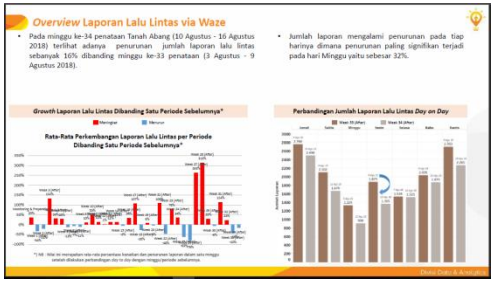
Big Data Portal

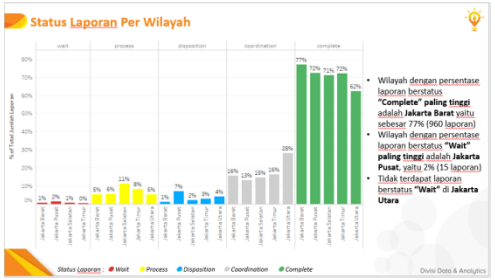


Periodic Report









Kategori Toko	Nilai Transaksi April 2018	Nilai Transaksi Mei 2018	Selisih
Pakaian & Aksesoris	4.562.816.221	3.092.155.342	-1.470.660.879
Buku & ATK	1.124.365.906	654.041.546	-470.324.360
Sepatu,Tas,Seragam	863.626.348	546.000.300	-317.626.048
Supermarket	23.500		-23.500
Transportasi	20.000	23.000	3.000
Seluler	13.209.000	13.245.000	36.000
Sembako,Susu,Makanan	350.000	1.489.000	1.139.000
Koperasi & Sekolah	53.403.770	62.979.775	9.576.005
Lainnya	603.265.202	687.854.736	84.589.534

Transparent

Open D

Presentin
Agency in D

API Ja
inform
Jakar

Contains inf
indicators fror
Jakarta in the

Pelayanan Jakarta

The Jakarta Service Portal contains information about the one-door service managed by DKI Jakarta's Capital Investment

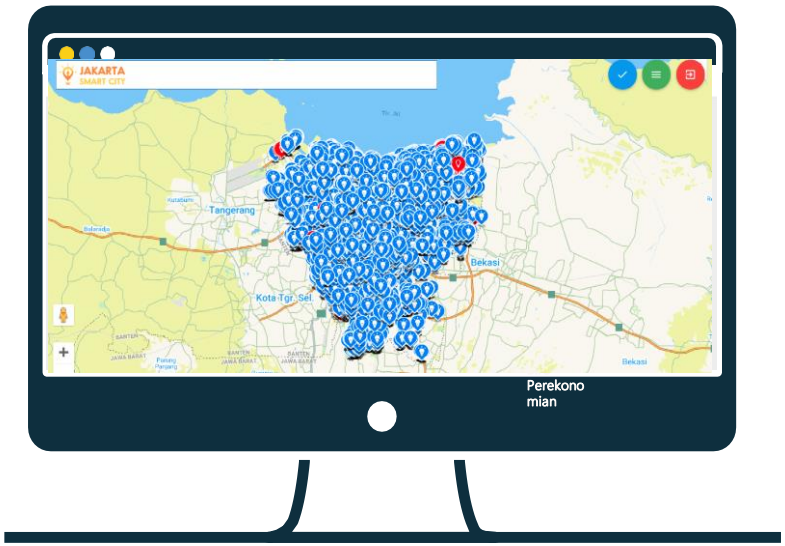
DKI Jakarta Provincial Government has been included

in the example of "Indonesian Open Government best practice."

http://opengovindonesia.org/front/bestpracti

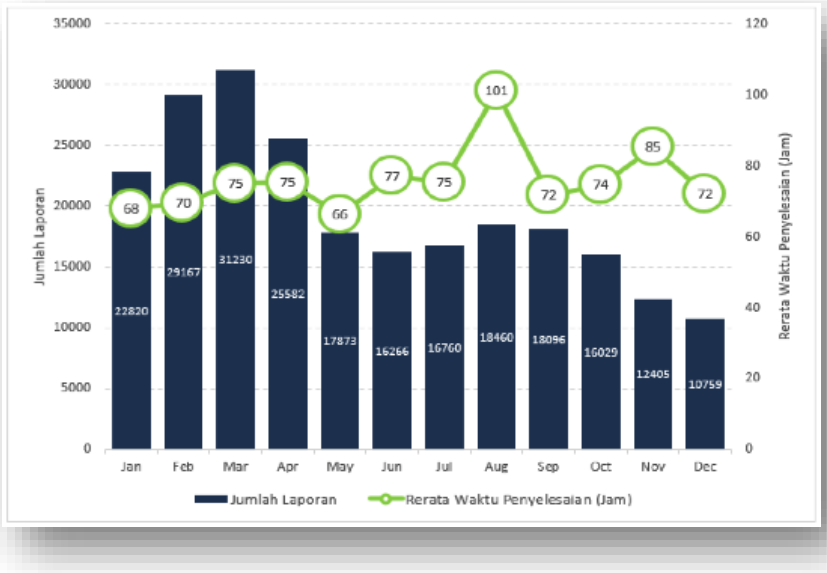
smartcity.jakarta.go.id

Efficient - Smart Street Light



- Place sensors & replace **240.886 street lights** into LEDs
- **40-50% energy** use efficiency & **37%** budget efficiency
- Centralized monitoring system, more efficiency in monitoring and maintaining street lights
- Light intensity varies to get more efficiency

Effective – Completion of Citizen Reports



BEFORE

2015: **14,852 reports,** average completion time **300 hours**

AFTER

2017: **235,447 reports,** average completion time **76 hours**

Digital Competency and Digital Literacy

Indonesia Digital Profile

From Digital Competency to Digital Transformation

1

DIGITAL COMPETENCY

Understanding how the Technology is used

2

DIGITAL USAGE

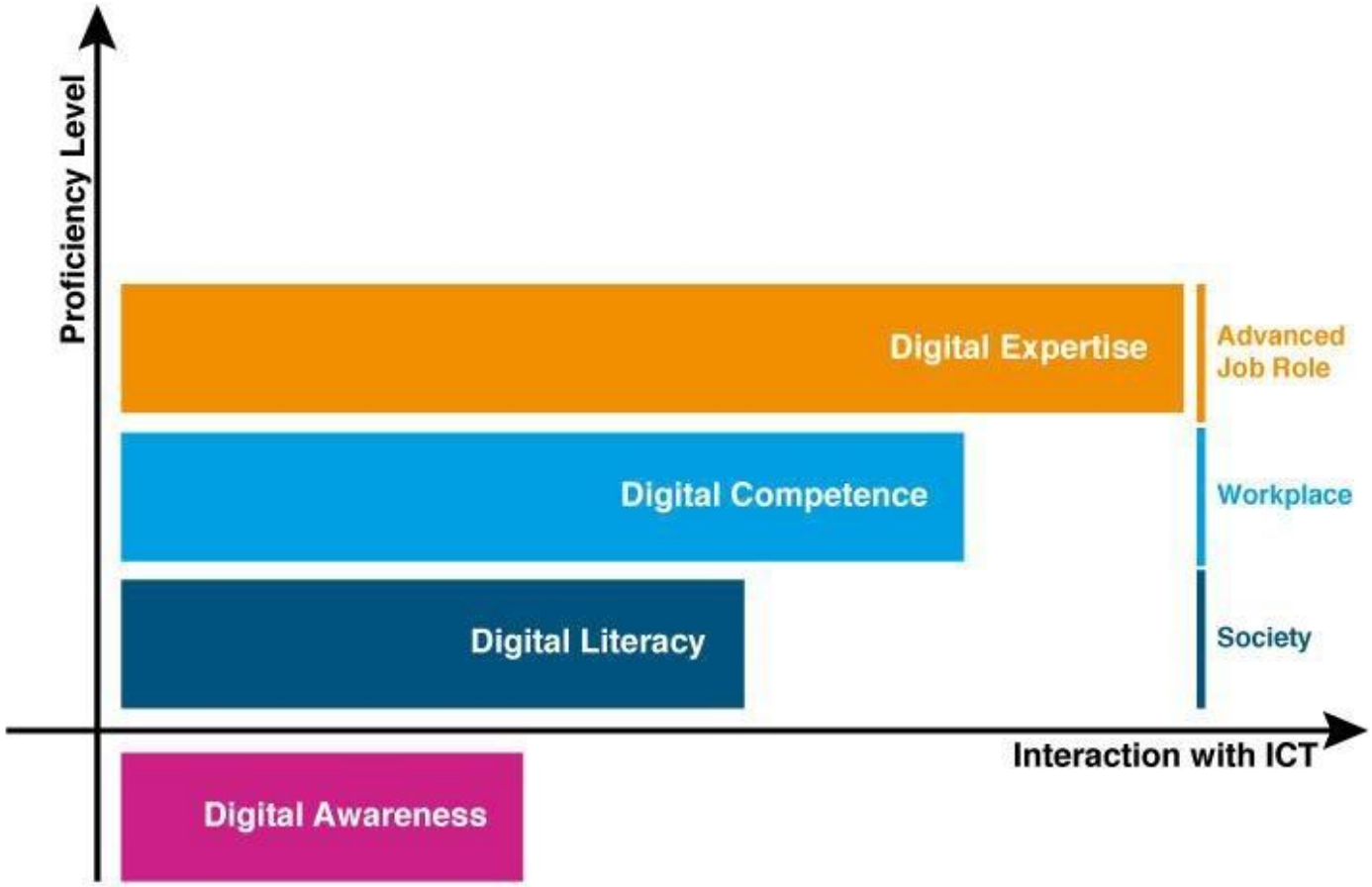
Actually using the Technology

3

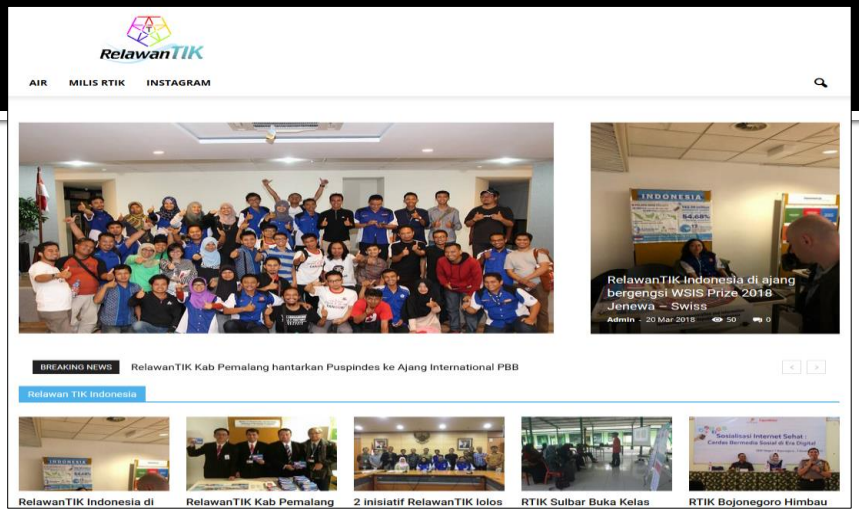
DIGITAL TRANSFORMATION

Altering Business Practices to Implement Technology Changes

Developing the Digital Literacy in the Society



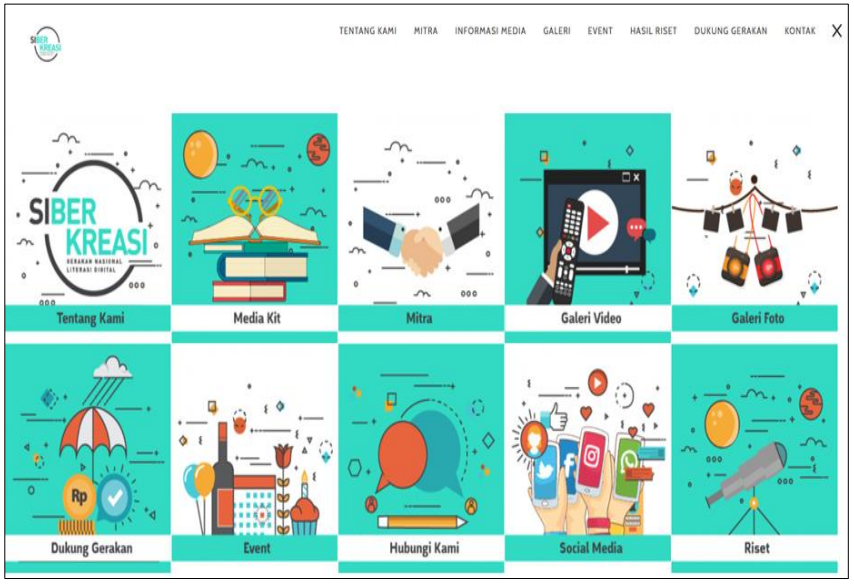
Digital Literacy Education



http://relawantik.or.id

http://literasidigital.id

http://internetsehat.id



http://siberkreasi.id

Digital Competence

Central Government?

THE 13TH WASEDA – IAC

1. **Ranking in Asia-Pacific Countries**

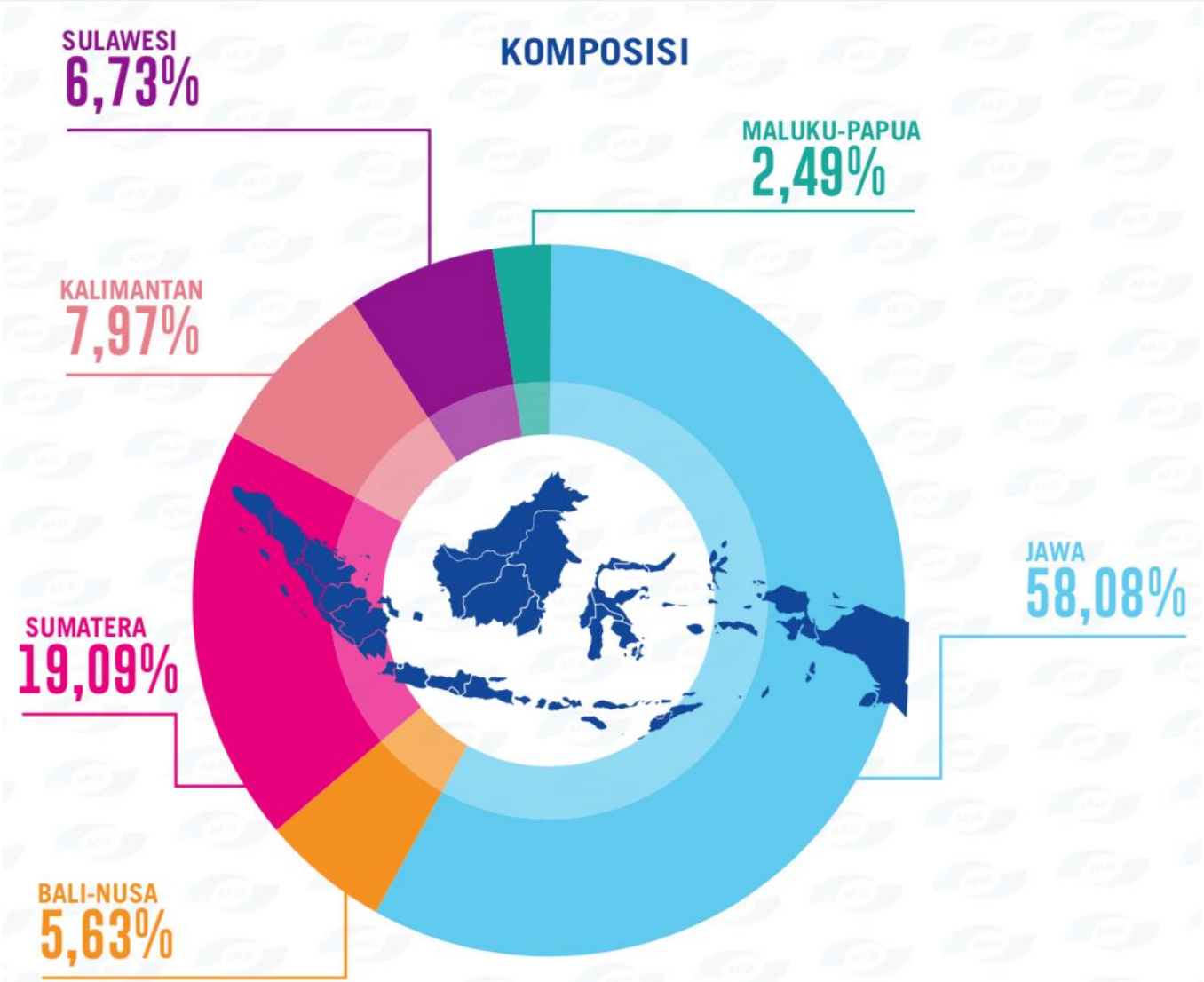
Gerakan Menuju 100 Smart City 2017

2	Japan	81.236	6	India	57.071
3	Russia	58.449	7	Mexico	53.441
4	Indonesia	58.032	8	China	52.865

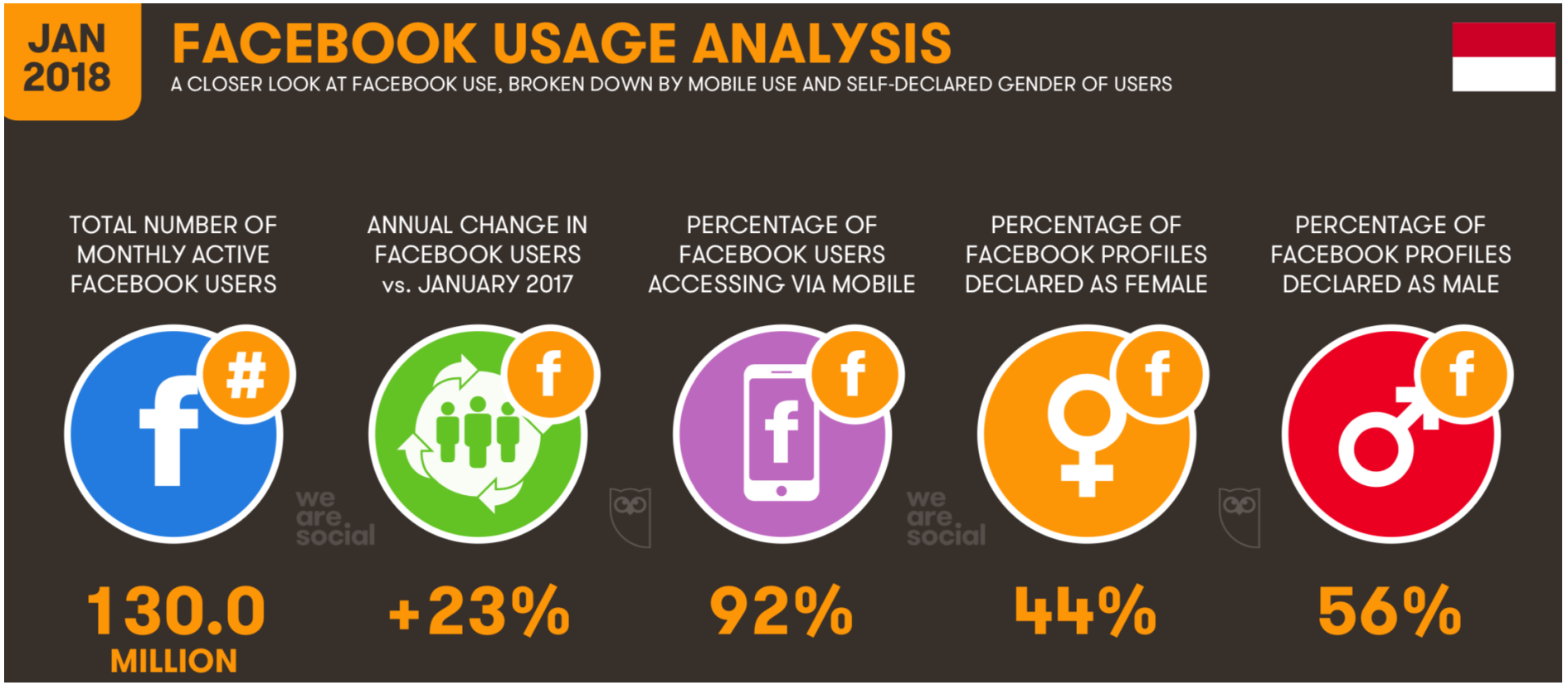
Table 7: D-Government Ranking in Big Population Countries

Digital Divide

Digital Divide

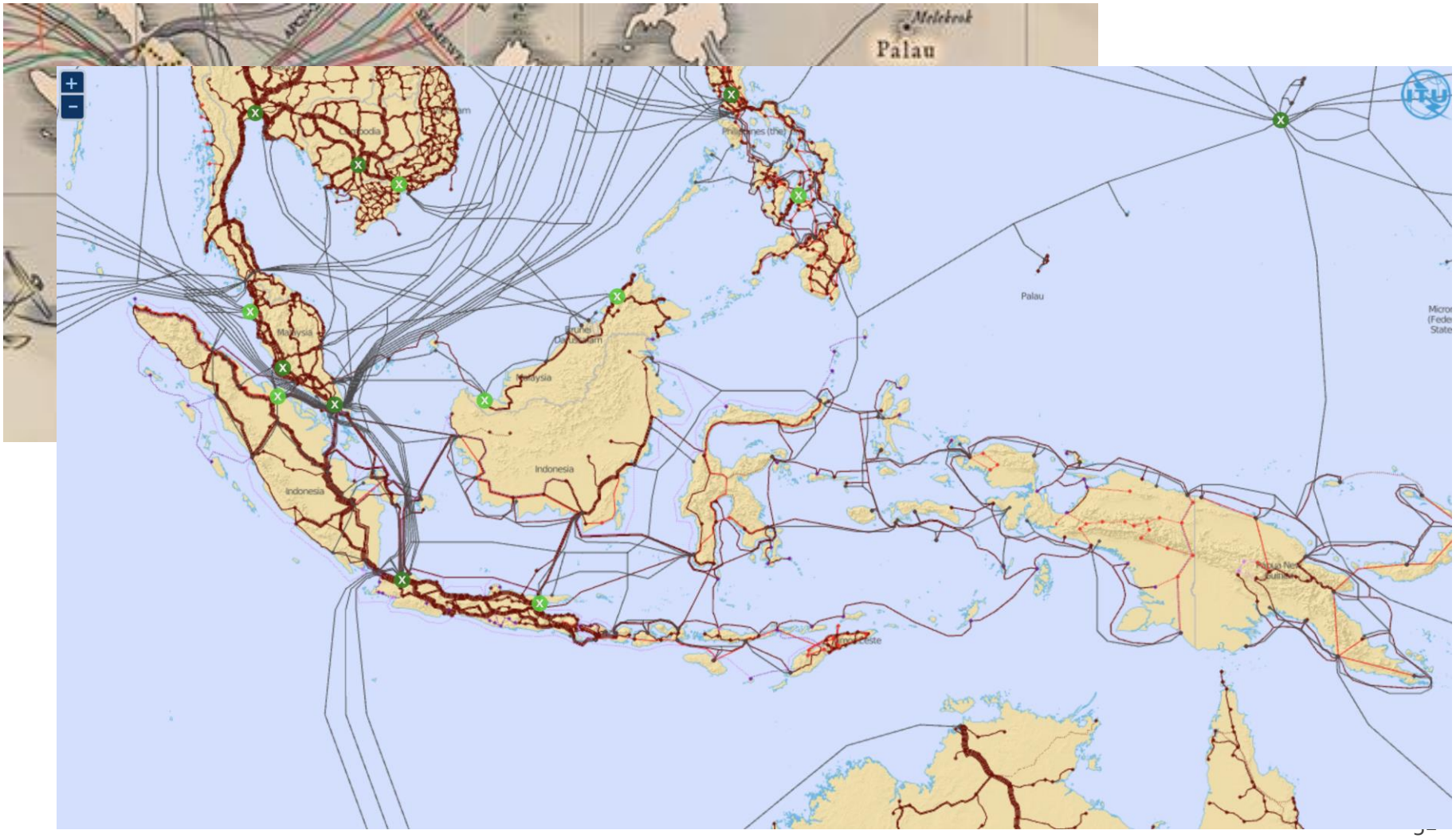


Facebook Usage Analysis



Infrastructure – Palapa Ring

submarinecablemap.com

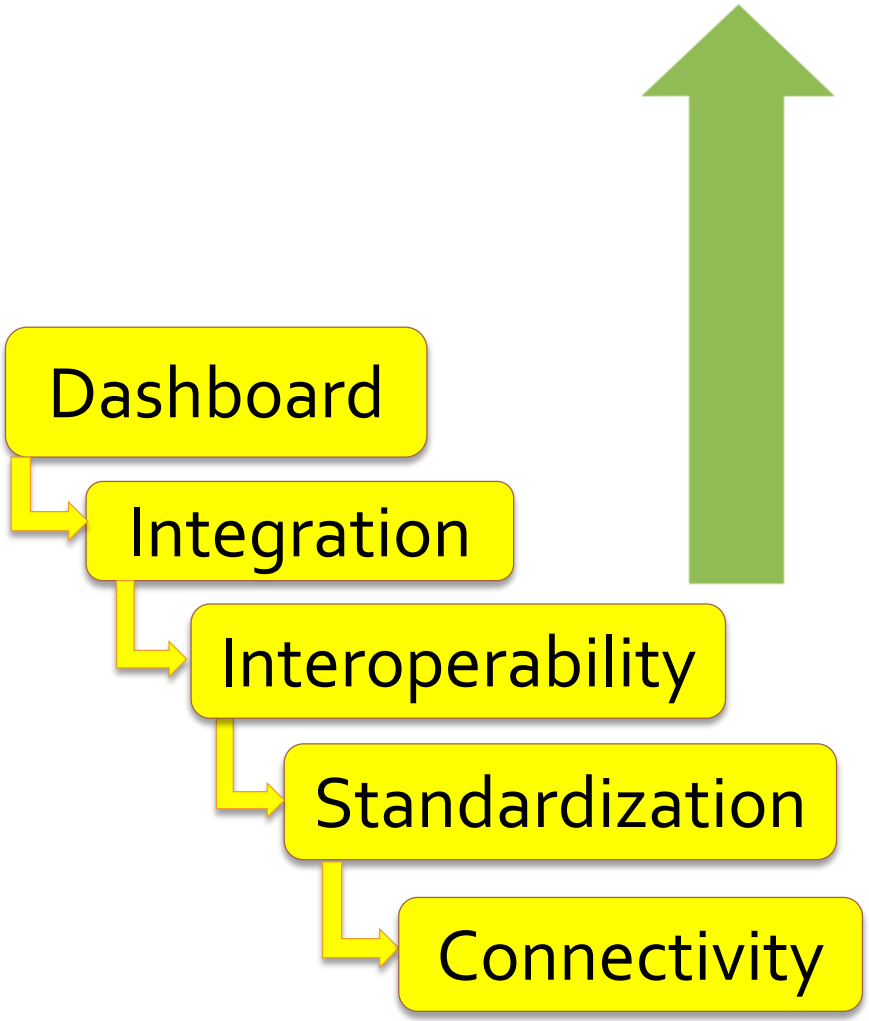


Infrastructure - Digital Divide

Research:

1. ICT Acceptance among Fishermans (Ruldeviyani, Prasetiawan, Sucahyo 2015)
2. ICT Acceptance among Farmers (Ruldeviyani, Rahayu, Sucahyo 2015)

ICT Access Hierarchy



Access to Localized Content

Access to Content

Access to the Internet

Access to Internet Provision Infrastructure

Access to Computing Device

Access to Electricity/Power Source

Access to Computing Skills/Education

Access to Financial Resources

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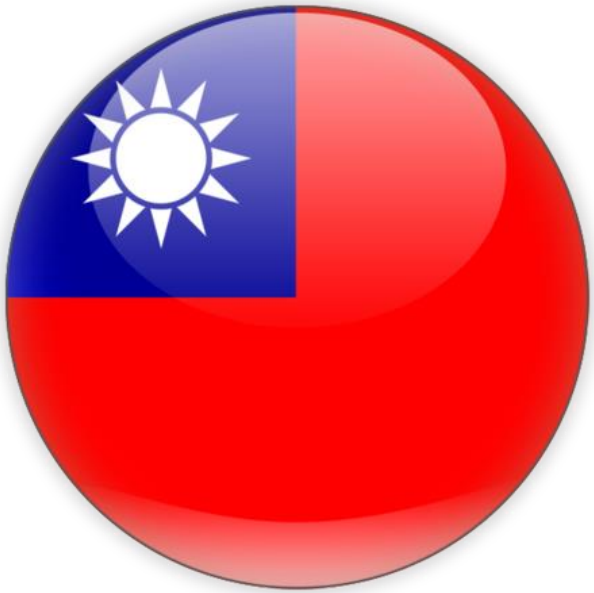
谢谢 – Terima Kasih



Together, let us make a Better Digital Cities

References

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- Internetworldstats.com
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