

Technology-driven solutions for the innovation of land administration and management

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Established in

1977



Number of Employees

4,378



Countries of Overseas Projects

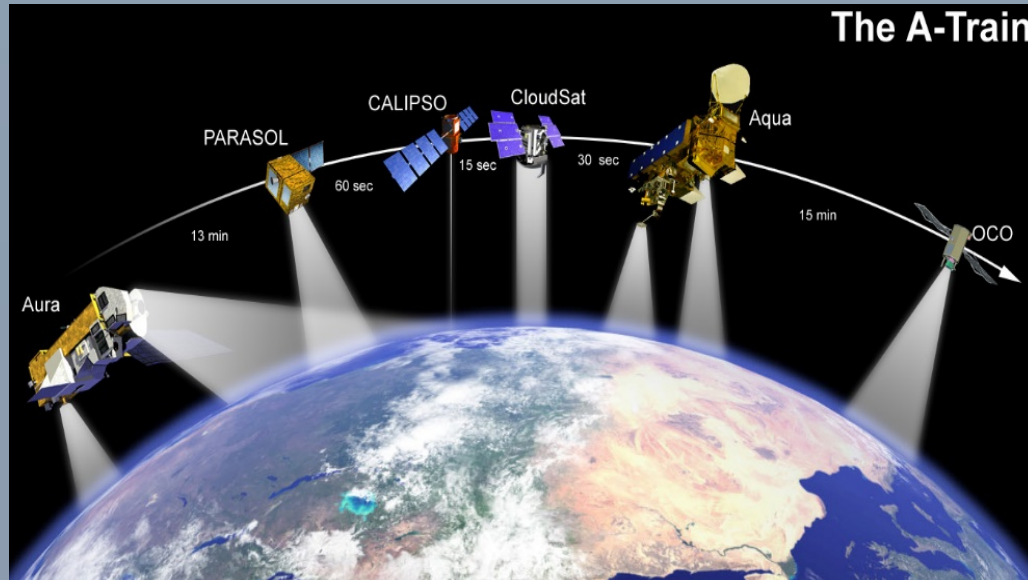
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Technology and economic growth

- Studies*find link between technology innovation and national economic prosperity – especially, **strong connection between ICT investment and economic growth**
- Study of 120 nations between 1980 and 2006 estimated –
 - each 10 percentage point increase in broadband penetration adds
 - 1.3 percent to a high income country's gross domestic product
 - 1.21 percent for low to middle-income nation
- Faster broadband and wireless speeds enable people to take advantage of new digital tools such as GIS mapping and other technologies related to administration and services

* 1. Christine Zhen-Wei Qiang, "Telecommunications and Economic Growth," Washington, D.C.: World Bank.
2. Taylor Reynolds, "The Role of Communication Infrastructure Investment in Economic Recovery," Working Party on Communication Infrastructures and Services Policy, OECD.

Advanced technologies in Cadaster & Land Administration



IDB Project in Uruguay

Purpose

- Fining the best methodology to create digital cadastral map in terms of cost/time/manpower aspects
- Establishing sustainable economic growth and citizen centered e-government by organizationally utilizing land information with various information that other departments have



Duration /Area

- Project duration : **12M**
- Project Area : **Canelones City and Agricultural area**
(population 20 thousand /12sq.km)

Scope

- Acquisition of aerial photograph using UAVs and building cadastral map in urban area.
- Acquisition of satellite photograph and building cadastral map in rural(agricultural) area.
- Verify locational accuracy through ground survey and provide innovative technical approaches comparing current cadastral map.
- Conduct overseas training (10 persons / 2 weeks)



Related Organizations

Project Implementation System

Overall control



Administration



Counterpart



Implementation



Final result from the Project



Before



After

In rural areas



In urban areas

Final result from the Project

Unmanned Aerial Vehicle (UAV)

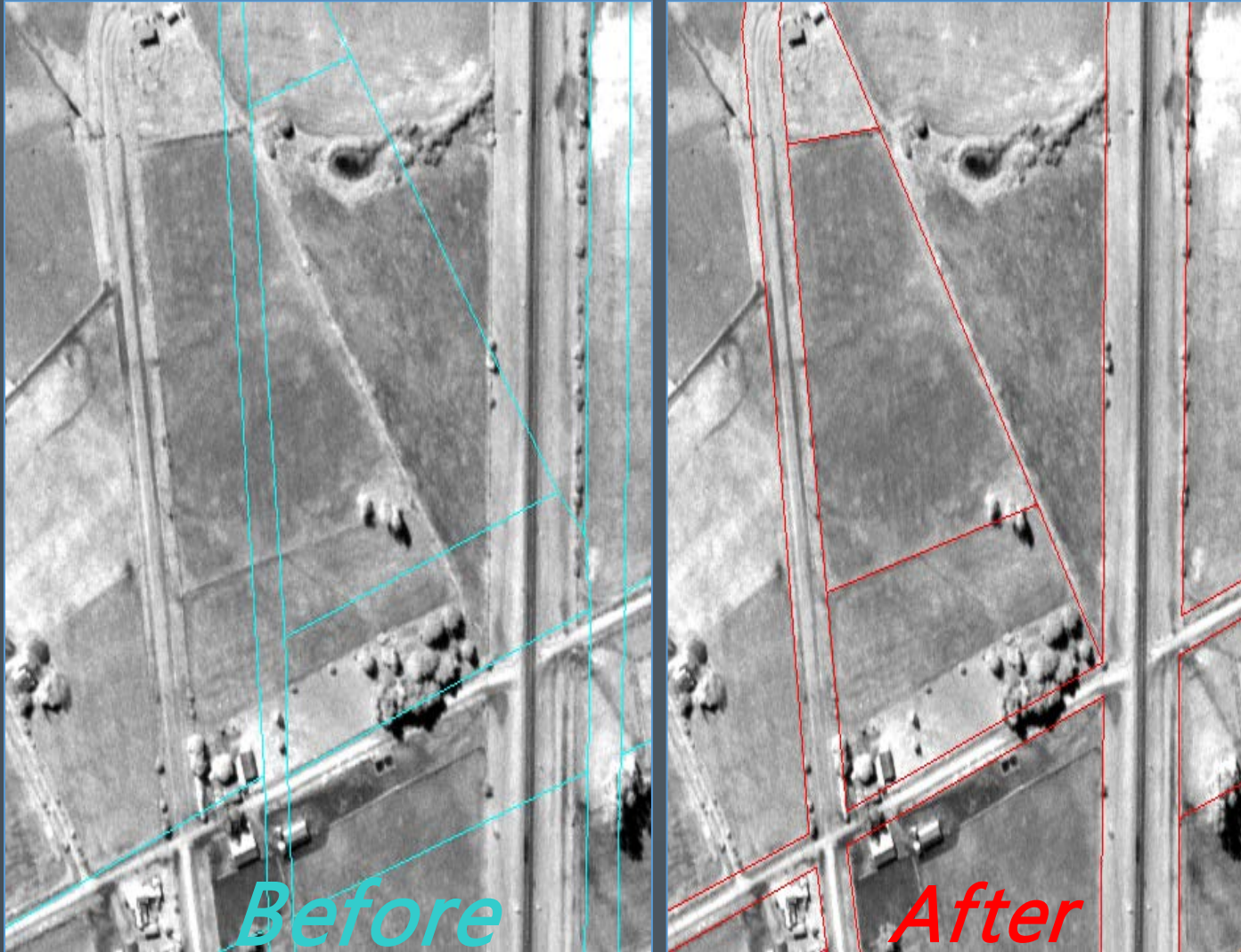
1. Fixed wing

- Less than '5cm' level accuracy
- 12 sq. km (Canelones city)
- 120/150/200m
- 60/70/80% overlap
- (1*1km for pilot area)
- A cadastral map was produced on the basis of the existing map



In urban areas

Final result from the Project



In rural areas

Satellite imagery

- KOMSAT-3A
- Under 50cm level accuracy
- Approx. 280 sq. km
- About 70 GCPs were measured
- Ortho-photo map
- A cadastral map for rural area was produced on the basis of the existing map



Korea at a glance

- Officially: Republic of Korea
- Seoul (Capital)
- Area: 100,210 km²
- Land use: Forest(65%), Agriculture(21%), Residential(3%)
- Population: 51.2 million
- Population Density: 499/Km²
- Parcels: 37 million



The Korean War (1950 - 1953)



- Civilians killed: 0.8 million people
- Separated Families: 10 million people

* Population of Korea (south & north) was 30 millions in 1950.

- **More than 80% of the infrastructure and facilities in Korea were totally destroyed.**
- **GNI was only \$67 in 1953.**

Efforts for economic development

Korea began to restore and industrialize its economy

• 1960s. Export Promotion



• 1970s. Heavy and Chemical Industrialization



• 1980s. Structural Reforms and Liberalization Programs.



• 1990s. Remarkable development of IT industry



• 2000s. Export amount reaches US\$ 1 trillion.



Economic development
from the ashes of war

GDP(\$): 1.44 trillion in 2015
Ranked 11th in the world



Korea's Land Problems from Rapid Development



Skyrocketing land price



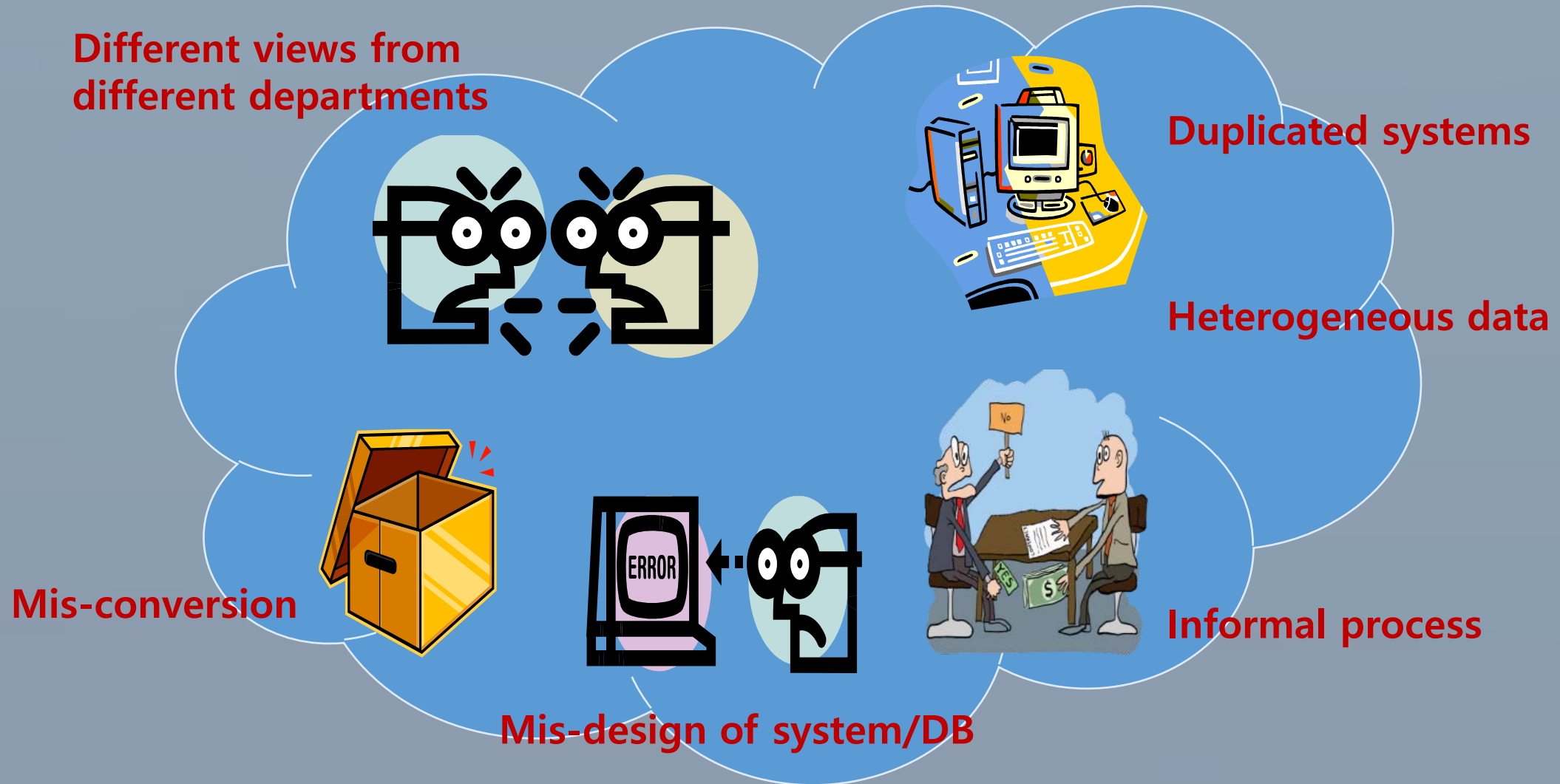
Environmental problem



Land disputes



Problems extended to administrative areas



The solution: KLIS (Korea Land Information System)

To establish a more efficient and systematic
land administration and innovate civil services

Enhance public
service by
creating a unified
channel to provide
land information

Increase
transparency
and reliability of
land information

Establish a
foundation
for innovative and
systematic policies

Promote
advancements in
property
transactions
based on transparent
information

The Problems

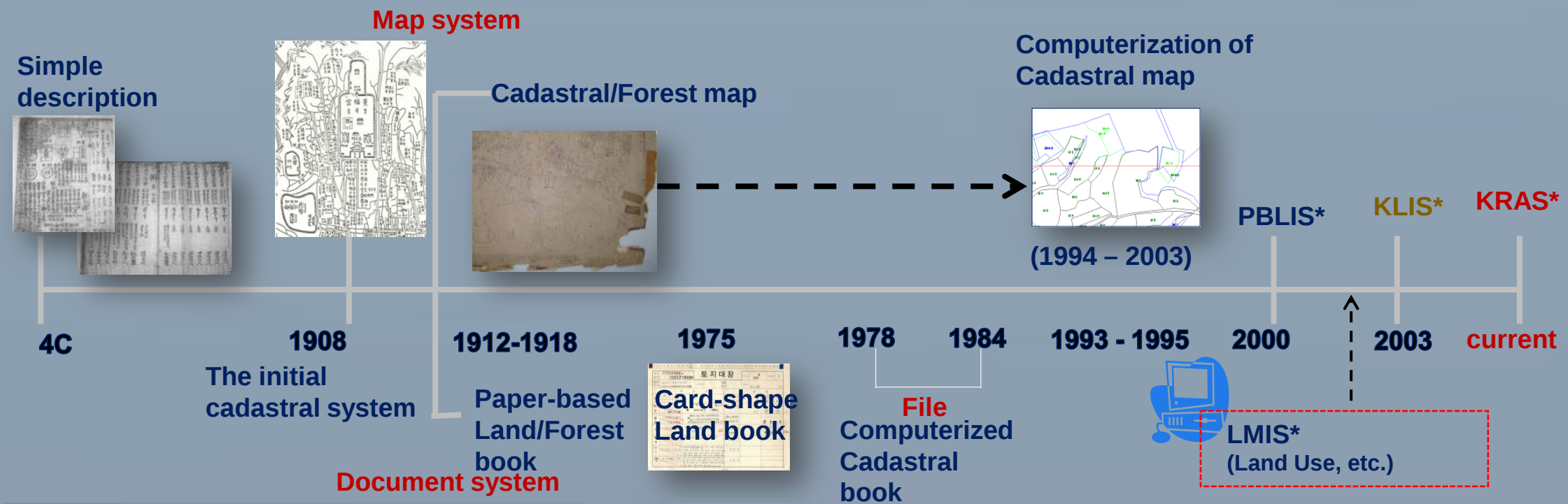
Duplication of works

Multiple investment
in information

Time-consuming public service

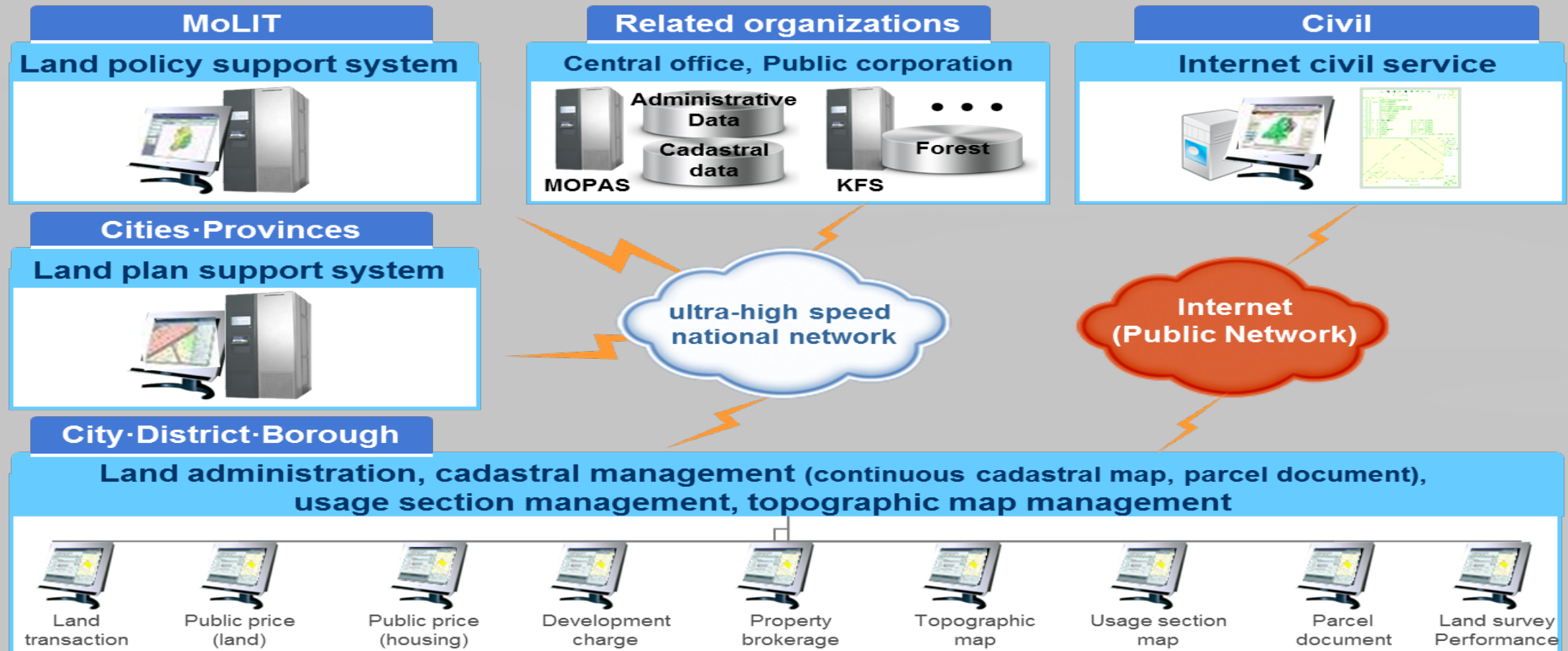
Conflicts of interests

History of modernization of land administration

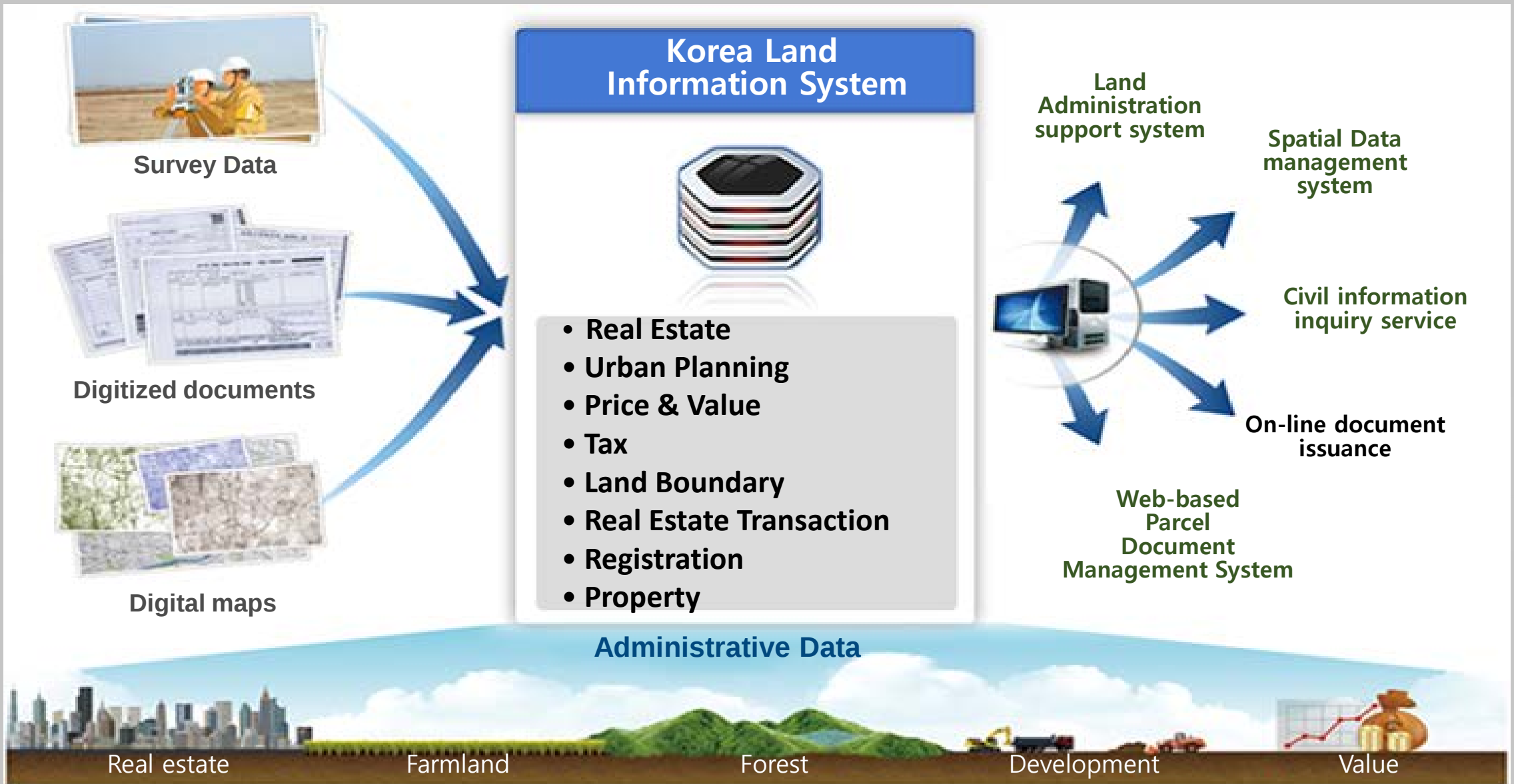


Integrative Land Information System

Construction of a nationwide ICT-based system using an ultra high-speed national network, linking the Ministry of Land, Infrastructure, and Transport with 17 metropolitan cities and provinces, and 229 cities, counties, and wards



Flow of KLIS



On & Offline Public Services

KIOSK Service



Bank

Community Center

Market

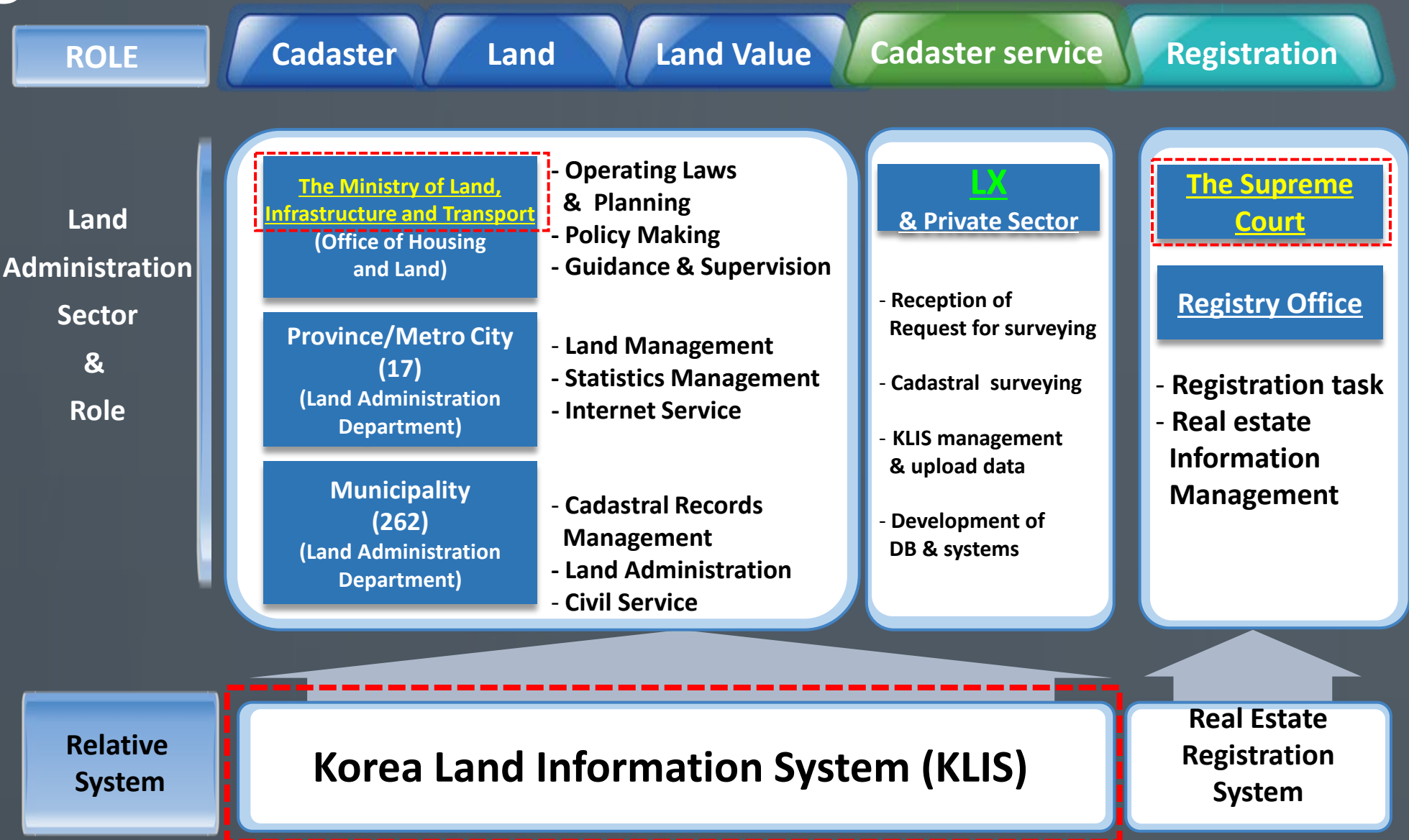
Online Land Information Service

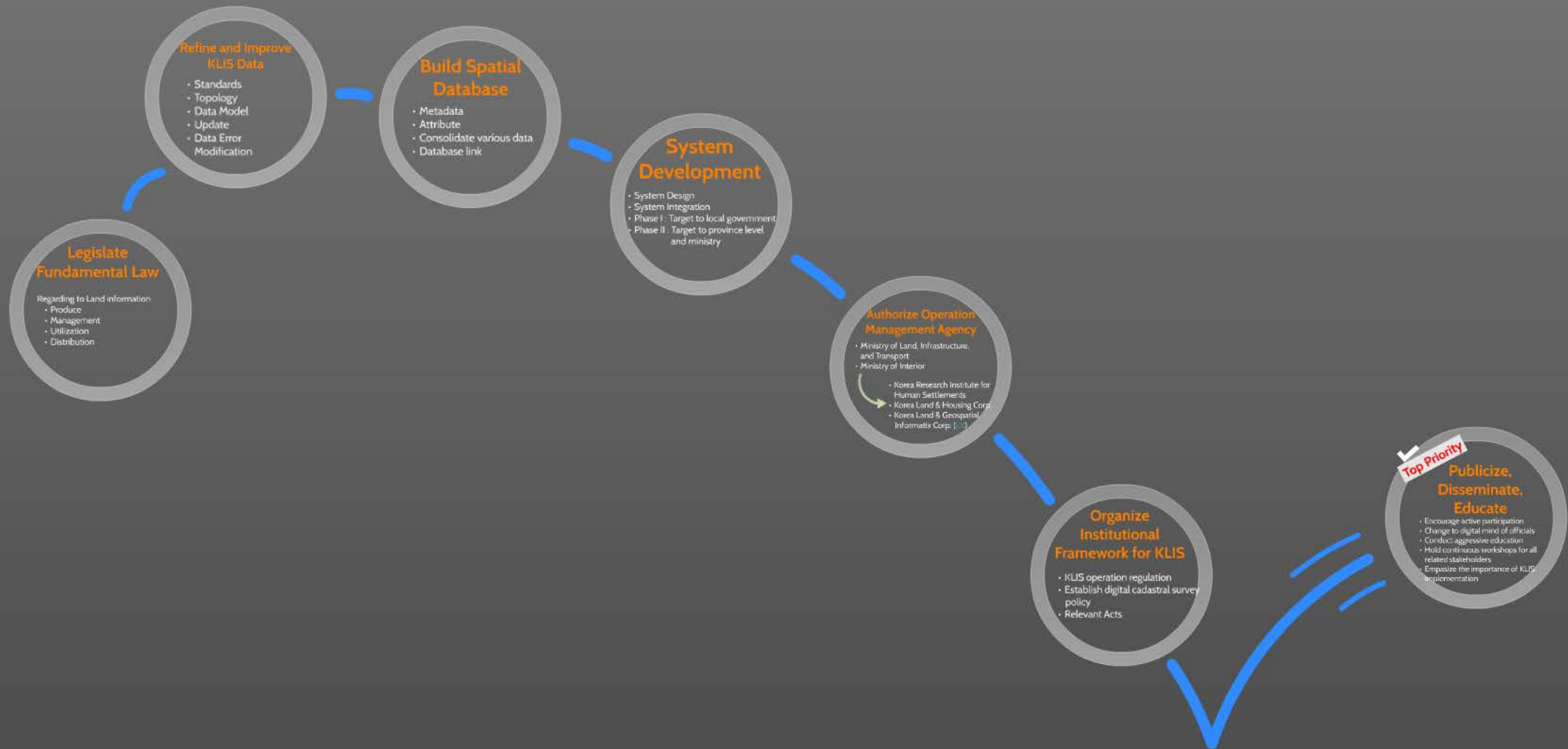


Anytime! Anywhere!

[illegible]

Organizational structure of Land Administration & Registration





How to achieve goals?

Refine and Improve KLIS Data

- Standards
- Topology
- Data Model
- Update
- Data Error
Modification

Build Spatial Database

- Metadata
- Attribute
- Consolidate various data
- Database link

System Development

- System Design
- System Integration
- Phase I : Target to local government
- Phase II : Target to province level
and ministry

Authorize Operation Management Agency

- Ministry of Land, Infrastructure, and Transport
 - Ministry of Interior
- 
- Korea Research Institute for Human Settlements
 - Korea Land & Housing Corp.
 - Korea Land & Geospatial Informatix Corp. (LX)

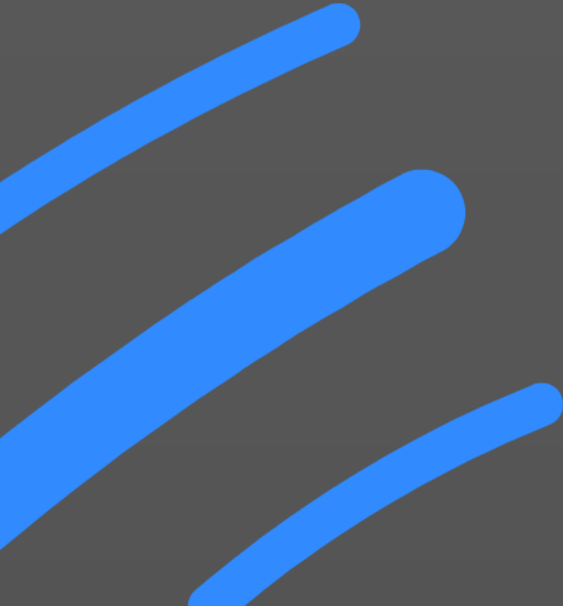
Legislate Fundamental Law

Regarding to Land information

- Produce
- Management
- Utilization
- Distribution

Organize Institutional Framework for KLIS

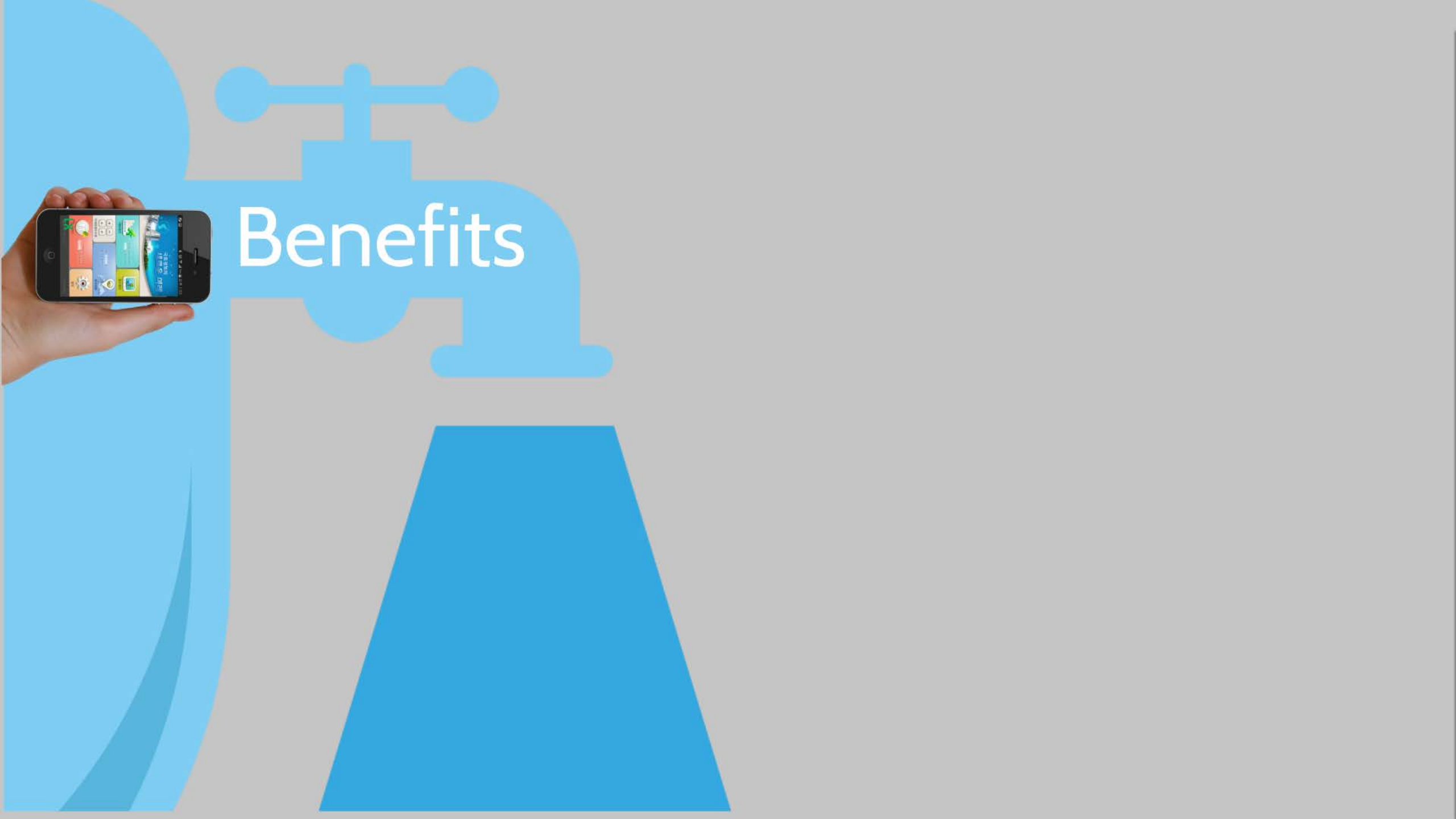
- KLIS operation regulation
- Establish digital cadastral survey policy
- Relevant Acts



✓
Top Priority

Publicize, Disseminate, Educate

- Encourage active participation
- Change to digital mind of officials
- Conduct aggressive education
- Hold continuous workshops for all related stakeholders
- Emphasize the importance of KLIS implementation



Benefits

Access to public Information

52.5 million
transactions via the internet
in 2014

Certificate of Residence
Certificate of Family
Relations

15.5 million

Land Register, Land Book &
Land Use

19.9 million

KLIS



Access to land information

unit : million

Service	Total	Transaction				
		2010	2011	2012	2013	2014
Copies of land register (ownership)	55.2	11.3	11.6	10.6	10.8	10.9
Copies of land-book (cadastre)	46.2	7.9	8.3	9.1	12.0	8.9
Confirmation Land Use Plan	1.1	0.2	0.2	0.2	0.3	0.2
Grand total	102.5	19.4	20.1	19.9	23.1	20.0
Cost saving (\$3 for each transaction) unit : million \$	307.6	58.3	60.3	60.0	69.2	59.8

20 million

transactions per year

\$ 60 million

Cost Saving per year



Reduction of administration-cost and time

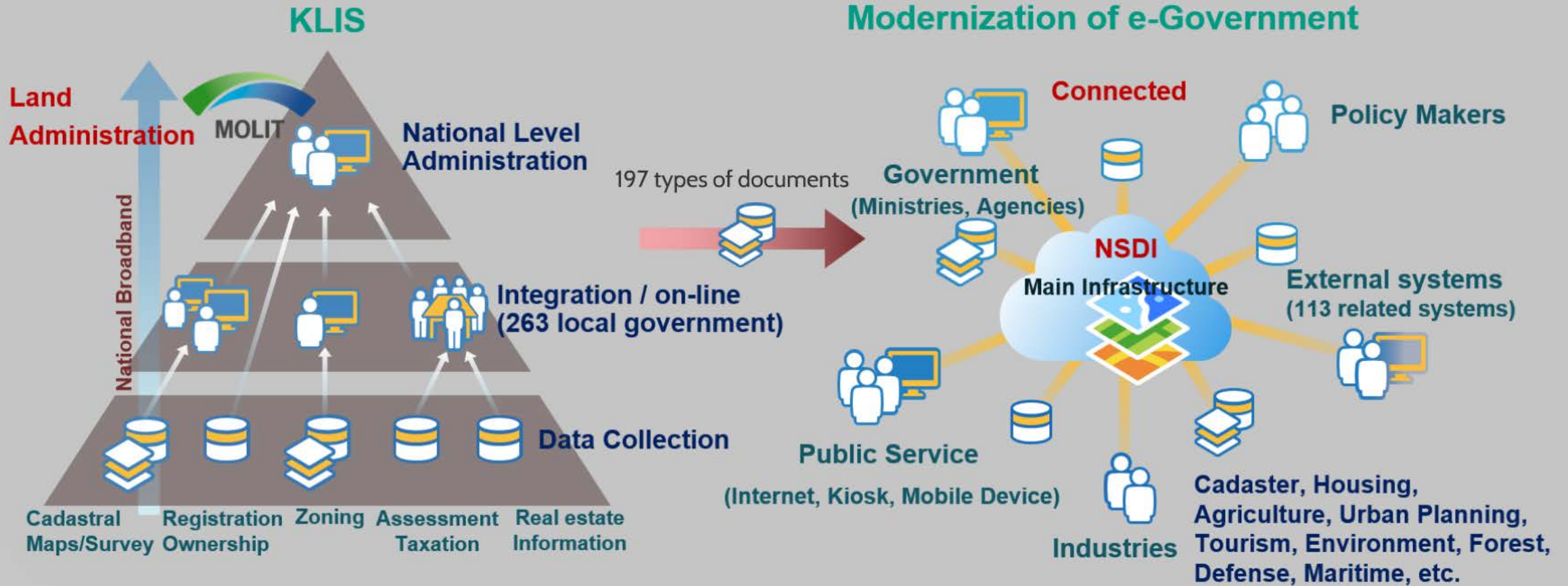
Service	Before	After
Issue an official copy of land register	20 minutes	Instant
Issue an official copy of land use plan	20 minutes	Instant
Access to publicly noticed individual land price	10 minutes	Instant
Permit of land transaction	10 days	1 day
Formal objection to appraised value of land	10 days	3 days
Register real estate agency	5 days	1 days



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-
-



KLIS Service



Thank you very much for your attention



Outputs of land informatization

197 types of documents

- Parcel documents 39 types
- Development fee 23 types
- Public housing price 37 types
- Public land price 52 types
- Property brokerage 20 types
- Land transaction permit 7 types
- Integrated civil documents 19 types

