

Artificial Intelligent Technology in Public and Private Sector : the case of Korea

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01 Introduction

- Recent Trends
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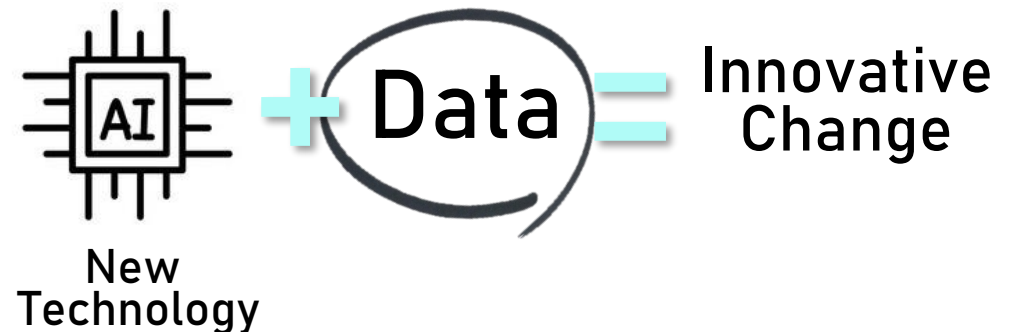
Introduction

1.1 Emerging Data Economy: 4IR and Big Data

- The data, which is the core input of the 4th industrial revolution, is recognized as raw materials such as petroleum, and it becomes a source of competition that overwhelms existing production factors (labor and capital).



- “The world’s most valuable resource is no longer oil, but data.” (Economist, May 6th 2017)



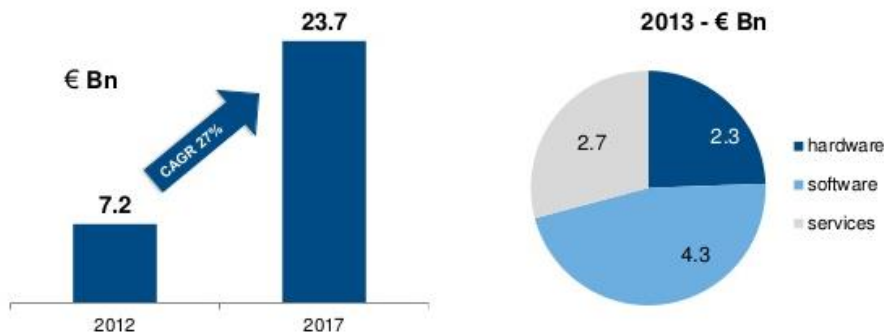
Introduction

1.1 Emerging Data Economy: 4IR and Big Data

- The success of the 4IR depends on the formation of a high-quality data market, acquisition of advanced artificial intelligence (AI) technology, and the systematic ecosystem of them.
- In Korea, there is not enough data value chain (construction, distribution, and utilization) market formation, and the AI technology gap between developed countries is large, so it is necessary to develop policies for fostering each value chains' strategies and accelerating convergence of them.

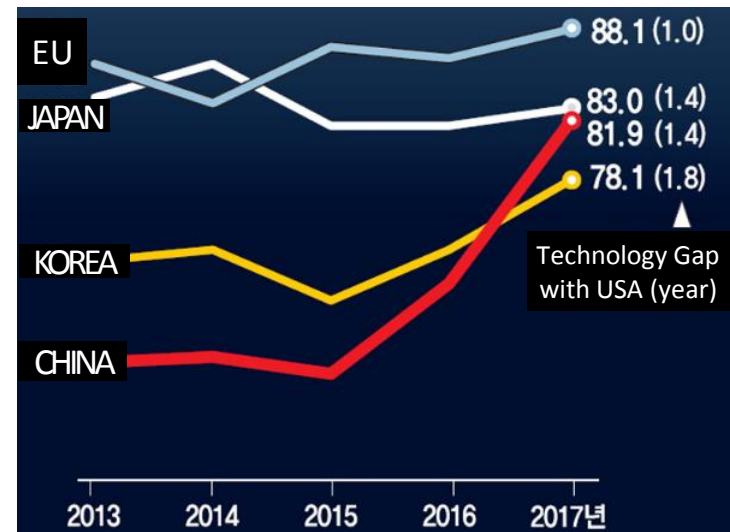
The Big Data Market grows 6 times faster than the traditional IT market

Big Data Technologies and Services Market, worldwide



(Source: IDC, 2014)

Artificial Intelligence technology level (US: 100)



(Source: IITP, 2017)

Introduction

1.2 Public (Big) Data

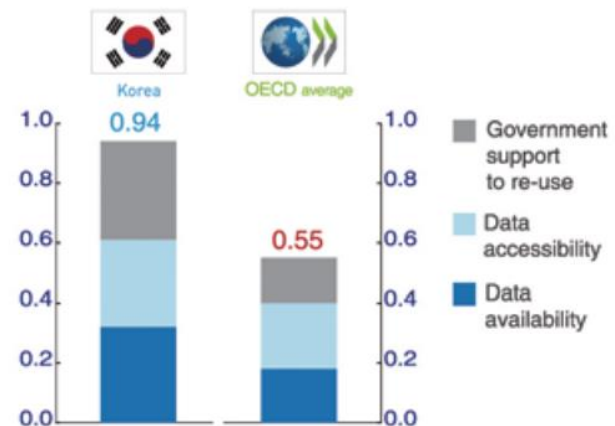
- Public data is public information that leads to the communication and cooperation of all the materials and information produced by public institutions and the public.
 - If each public institutions share and list the public data that can be opened to the public to the portal, the data can be reborn as high quality public data that can be analyzed and can create new value.
- Korea achieved 1st grade among OECD countries at OUR(Open, Useful, Reusable) government data index (2015, 2017).

*“Governments gather large amounts of information as part of its administrative duties. Some of that information can be put to use not only to improve the organizational efficiency of the government itself, but also to create value-added in private sector, foster innovation and empower citizens’ decision-making. **Korea scores the highest on the OECD OUR data index, a measure of data availability, accessibility and the government support for re-use of data.**”*

OECD Government at a Glance 2017,
Country Fact Sheet (Korea)

OURdata Index: Open, Useful, Reusable Government Data (2017)

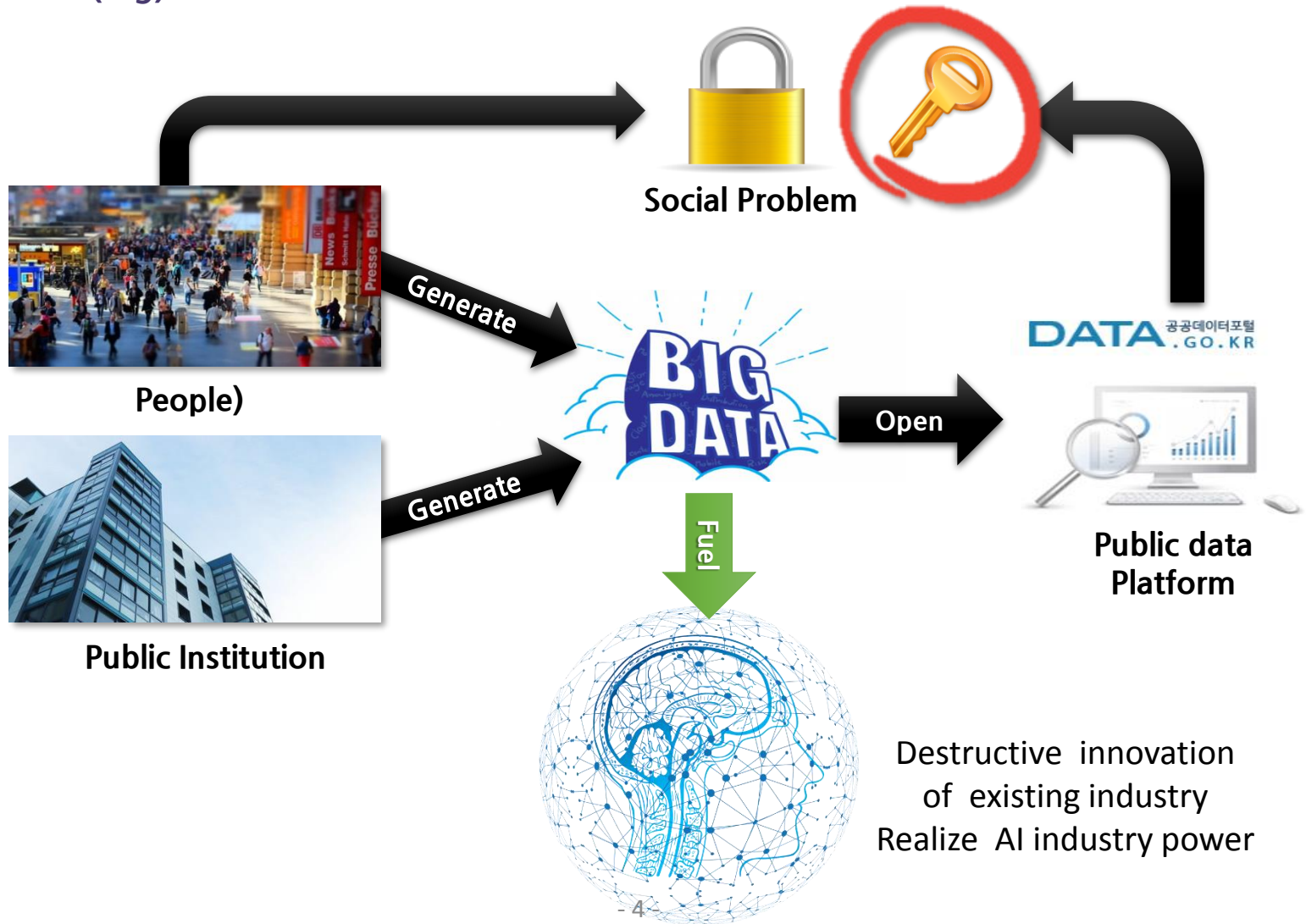
Composite index: from 0 lowest to 1 highest



Source: OECD (2016) Survey on Open Government Data

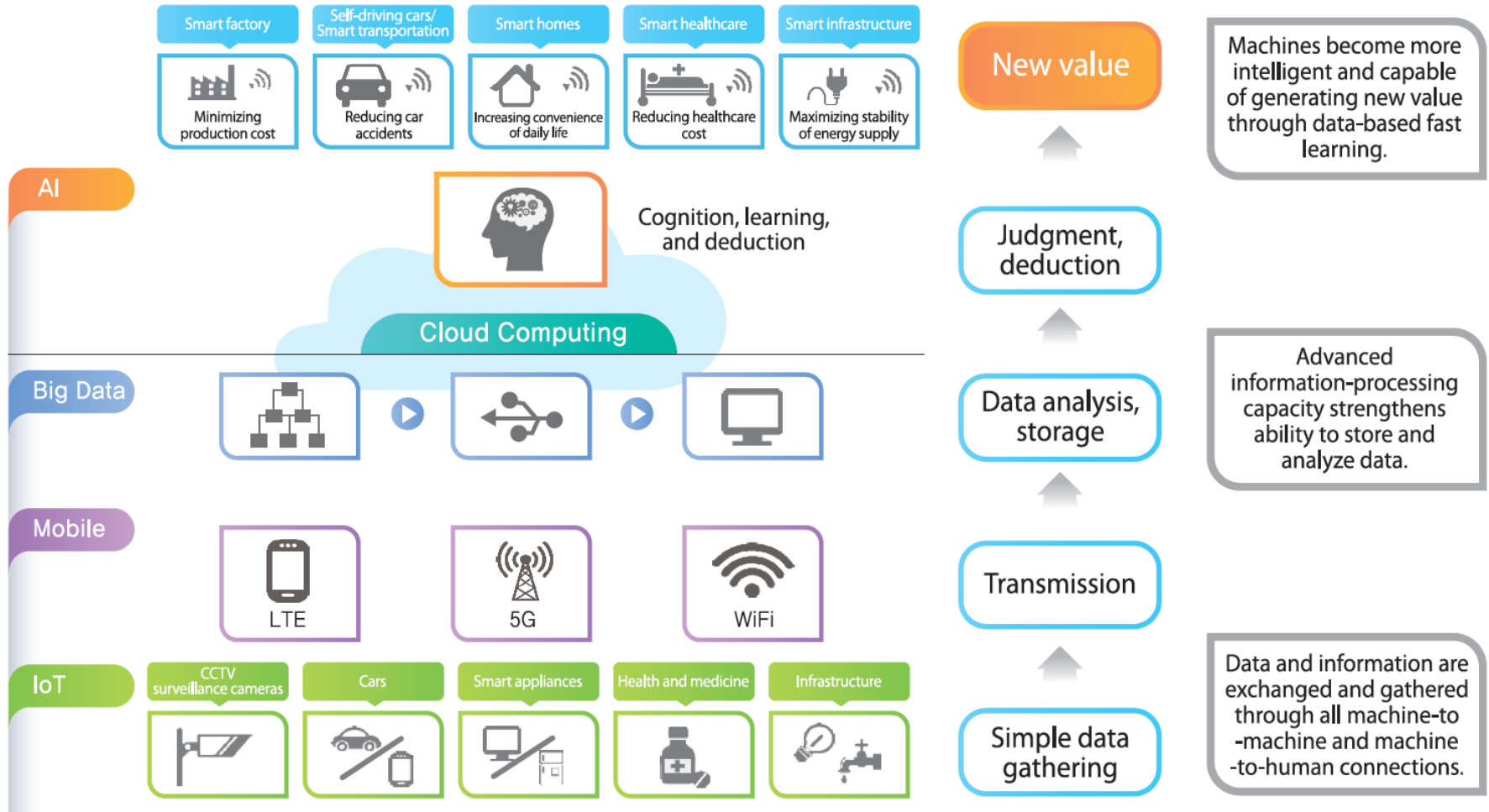
Introduction

1.2 Public (Big) Data



Introduction

1.3 Intelligent IT (ICBM + AI)



Introduction

1.3 Artificial Intelligence: Definition

“Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves.”

“A PROPOSAL FOR THE DARTMOUTH SUMMER RESEARCH
PROJECT ON ARTIFICIAL INTELLIGENCE” (1955)

J. McCarthy, Dartmouth College

M.L. Minsky, Harvard University

N. Rochester, I.B.M. Corporation

C.E. Shannon, Bell Telephone Laboratories

- The Original 7 Aspects of A.I. (1955)
 - Simulating higher functions of the human brain.
 - Programming a computer to use general language.
 - Arranging hypothetical neurons in a manner so that they can form concepts.
 - A way to determine and measure problem complexity.
 - Self-improvement.
 - Abstraction: Defined as the quality of dealing with ideas rather than events.
 - Randomness and creativity.

After 60 years, realistically it was completed **language, measure problem complexity** and **self-improvement** to at least some degree.

However, **randomness and creativity** is just on it to be explored.

Introduction

1.3 Artificial Intelligence: Classification

- **Weak methods in AI**
 - A computer cannot actually intelligent in the way that a human is
 - The intelligent behavior is merely modeled by humans and used by computers to solve complex problems
 - Emotions and real consciousness are not reachable
 - Use logic, reasoning, and other general structures to solve a wide range of problems
 - It is not necessary to incorporate real world knowledge

- **Strong methods in AI**
 - A computer can literally think and can be conscious in the same way that a human is conscious
 - Giving a computer program sufficient processing power
 - Providing it with enough intelligence
 - Given a great deal of knowledge about the problem and the real world.
 - Use weak methods to deal with knowledge

Introduction

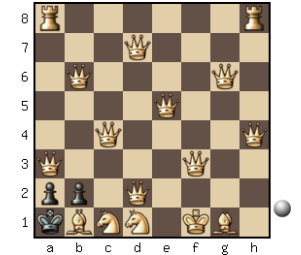
1.3 Artificial Intelligence: Classification

- **Artificial Narrow Intelligence (ANI):**

Machine intelligence that equals or exceeds human intelligence or efficiency at a specific task

Autonomous Vehicle, Translat

→ **One specific task**

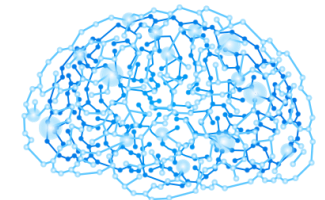


ANI: Chess Program

- **Artificial General Intelligence (AGI):**

A machine with the ability to apply intelligence to any problem, rather than just one specific problem (human-level intelligence)

→ **Many things like a human**



AGI: Human Level

- **Artificial Superintelligence (ASI):**

An intellect that is much smarter than the best human brains in practically every field, including scientific creativity, general wisdom and social skills

→ **More than what a human can**



ASI: Superintelligence

02 Application areas of AI

- Recent Trends of AI Applications
- Service Classifications
- AI in Public sector



Application areas of Artificial Intelligence

2.1 Recent Trends of AI applications

A Machine Learning Application Landscape

Consumer /Entertainment/Retail	Personal VR Game	Personal Secretary	Advertisement, Customized commerce
Transportation /Infrastructure	Autonomous Vehicle	Transportation, Grid control	Traffic control, Network Analysis
Enterprise Operations	Delivery Drone, Warehouse robot	Cyber Security	Sales, Marketing, Customer service
Oil&Gas/Agriculture	Field Drone, Robot	Climate, Water, Energy & Flow control	Sensing Data Analysis
Industrial/Military	Robot, Co-Bots, UAV (Unmanned aerial vehicle)	Factory control, Surveillance	Process operation/ Analysis
Medical/Healthcare	Medical Images, Water quality robot	Medical Analysis	Health Analysis, Consultation
	Device based	Hybrid Solutions	Cloud based

Source: Moor Insight & Strategies (2017)

Application areas of Artificial Intelligence

2.1 Recent Trends of AI applications

	Descriptions			
Technology	Natural language based Scenario methods		Machine Learning	Deep learning
	Voice recognition	Image (Text, Picture) recognition		
Business Sector	Internet service	PC, Mobile device, Home appliances	Semi-conductor	Software
Latency	Cloud+AI, Cloud+IoT+AI, AI+EDGE			
AI Level	ANI -----> AGI			
Service Areas	Data Analysis (Voice recognition service, Medical diagnostic system, Search for Judicial precedent, Marketing etc.), Education, Public service etc.			
ANI, AGI	Simple, Repetition, Research -----> Unmanned driving, Medical service, Legal service etc.			

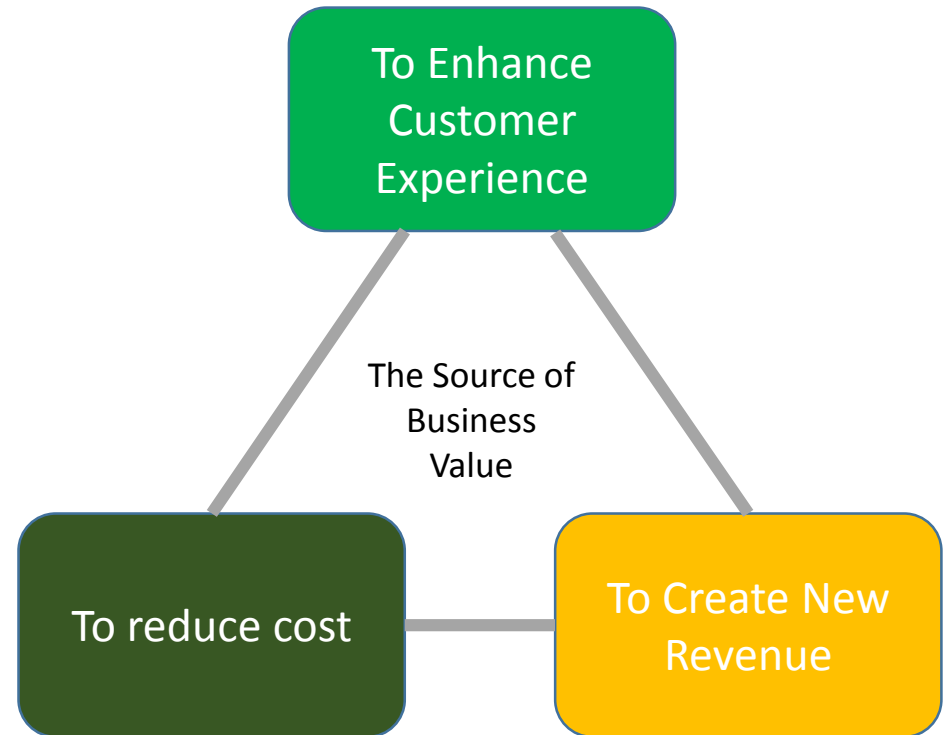
Application areas of Artificial Intelligence

2.1 Recent Trends of AI applications

<Change of Work Process based on AI>



<Business Productivity Innovation based on AI>



- 1) Artificial Intelligence for the Real World, Harvard Business Review (2018.1)
- 2) Forecast : The Business Value of Artificial Intelligence, Gartner (2018.3)

Application areas of Artificial Intelligence

2.1 Recent Trends of AI applications

- Mostly ANI based and still immature stage of AGI utilization
 - Currently AI for the specific task; Siri, mobiles, email filters and car navigators
 - Artificial General Intelligence (AGI) is what scientists and thought leaders believe will exist by 2040: a computer that is just as smart as a human in all aspects of planning, reasoning and solving problems. And that's only 25 years from now
- Most companies use AI based on bigdata to get more efficiency, effectiveness and revenue



Application areas of Artificial Intelligence

2.1 Recent Trends of AI applications

- ANI application fields are divided into product application and service based on voice recognition and they are expanding to Autonomous vehicle, Healthcare, Robot and Home appliance
 - From AI application using an existing platform to more expanded applications using their own AI platform
 - Expansion to public area such as smart city and public administration service

applied AI

Google is AI first, placing bets in all major areas

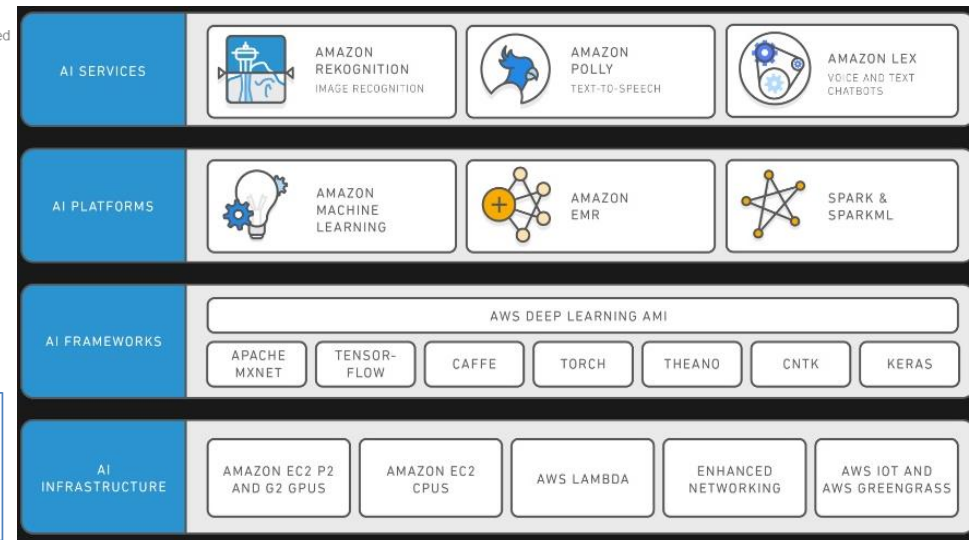
Major investments in non-core ventures and initiatives

Google 100% owned
Google Partially owned

Healthcare	Finance & Insurance	Cyber security	Transport & Logistics	IOT & Industry 4.0, Robotics
DeepMind Health Calico verily editas MEDICINE one+ 23andMe PIERIAN FLATIRON FOUNDATION	TALA LendUp THE CLIMATE CORPORATION CircleUp Recorded Future Core OS	IONIC ANOMALI Recorded Future Core OS	WAYMO SIDEWALK LABS urban engines UBER	nest Google Home Airware SKYCATCH savioke

Mighty Ai
 COHESITY
 MindMeld
 Research at Google
 DeepMind
 api.ai
 AI Enablers
 DataFox
 MAPD
 clarifai
 PREMISE

<https://blog.aimultiple.com/alphabet-ai/>



An Introduction to the AI services at AWS

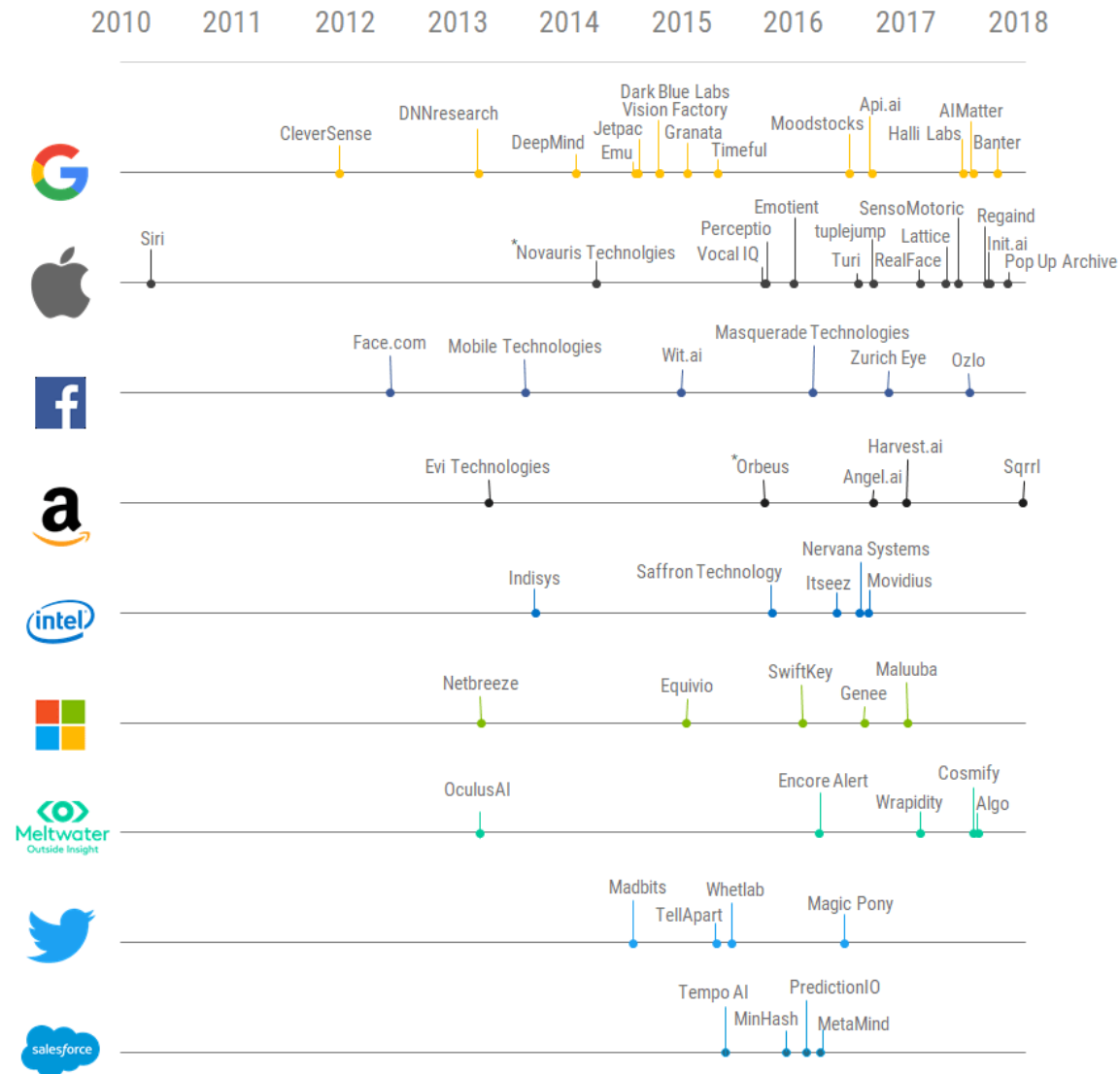
Application areas of AI

2.1 Recent Trends of AI applications

- AI startups are acquisition targets not only for big tech companies, but also for traditional insurance, retail, and healthcare incumbents.

Race To Acquire Top AI Startups Heats Up

Date of acquisition (only includes 1st exits of companies)



Source: cbinsights.com

*approximate dates of acquisition

CBINSIGHTS

Application areas of Artificial Intelligence

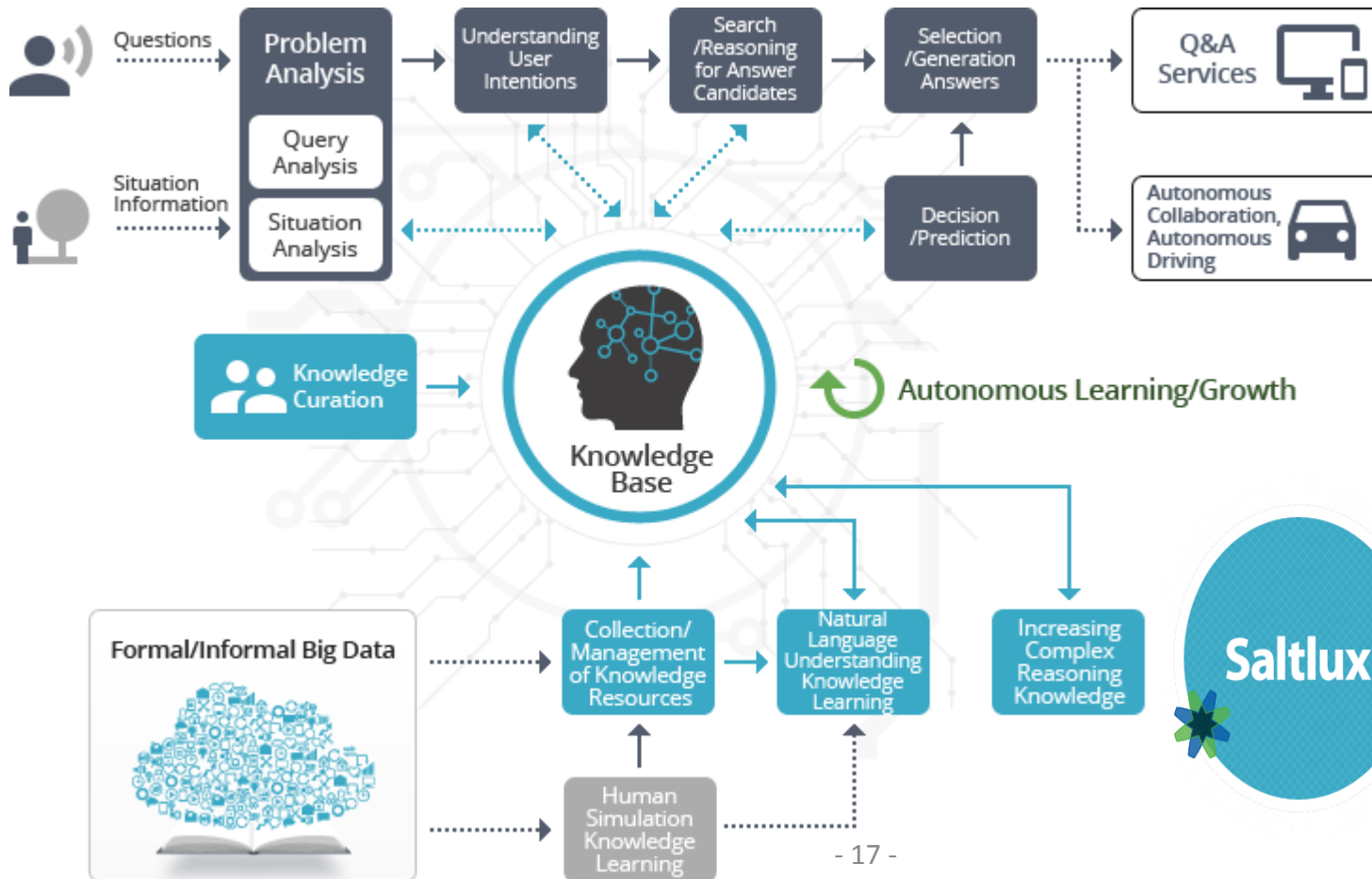
2.2 AI applications in Korea



Application areas of Artificial Intelligence

2.2 AI applications in Korea

- Talkbot - Saltlux Adam <http://www.saltlux.com/company/business.do>



- 1 Big Data/AI Unrivaled Original Technology**
 - Asia's Top Original AI Technology
 - The World's Best Real-time Big Data Analysis Technology
 - Holding Numerous Unrivaled Core Technology Patents Domestically
- 2 Excellent Performance, Validated Products and Platforms**
 - The Country's Only Integrated Big Data Products Line Up
 - High-quality Big Data/Knowledge Resources (10 million/day, 3 billion cases)
 - Next Generation Low-Cost DaPaaS Platform of O2 and Briefy
- 3 The Country's Top Experts Global Competitiveness**
 - Expert Groups in AI and Big Data Areas
 - Asia's Top R&D Capacity and Investment
 - International Cooperative R&D and Branch Integration Global Business

Application areas of Artificial Intelligence

2.2 AI applications in Korea

- **Docent Robot Service System**

- A specialized docent robot, based on autonomous driving system, introduces information about museums and exhibition centers to visitors

- Autonomous driving, collision avoidance, Emergency stop
- Information service on behalf of a professional guide staff
- Provides multilingual information service
- Provides contents that is appropriate for user's situation
- Provides a organized exhibition guidance system (Storyline Editor)
- Supports wireless head set
- Supports multimedia player



Robot based Active Exhibition system



Scenario (Contents) ↓ ↑ Path, Control, Service Information



Remote Control Station

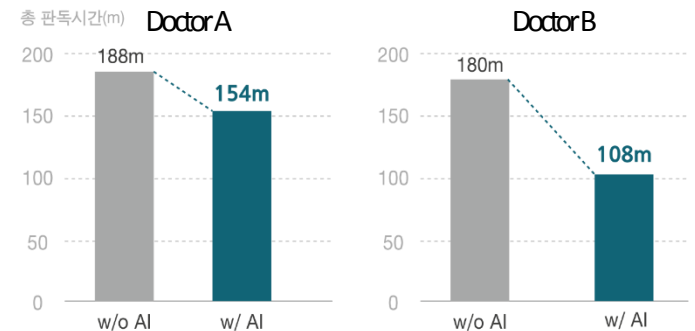
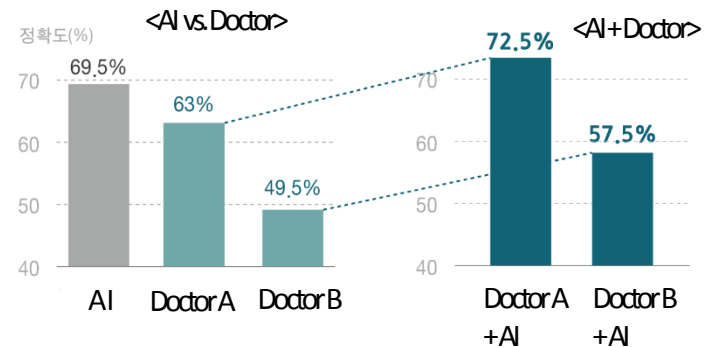


Run the role of the expert commentator of Exhibition Hall.
Move to the path of the plan through the autonomous.
Voice, Exhibition utilizing video contents.
Produce a variety of facial expressions.
Support for multi-language features.
Beam projector, wireless audio transmitter built-in.

Application areas of Artificial Intelligence

2.2 AI applications in Korea

- AI-based medical application
 - With its goal to expedite the decision-making process for medical professionals while providing better accuracy for diagnoses, VUNO has developed VUNO-MED™, a medical data analysis solution built on AI technology.
 - VUNO is available in large hospitals as an on-premise solution, and as a cloud-based service to clinics.
 - The VUNO-MED™ Bone Age series is the first among AI-based medical diagnosis solutions and devices in South Korea to be approved by the Ministry of Food and Drug Safety and has received accolades for improving reading speed by 40% and increasing reading accuracy by 8%.



Application areas of Artificial Intelligence

2.2 AI applications in Korea

- Samsung AI Platform - Bixby
 - On March 20, 2017, Samsung announced the voice-powered digital assistant named “[Bixby](#)”
 - Bixby acts as the controlling platform of users’ connected device ecosystem, including mobile phones, TVs and even home appliances to make the smart home experience even smarter

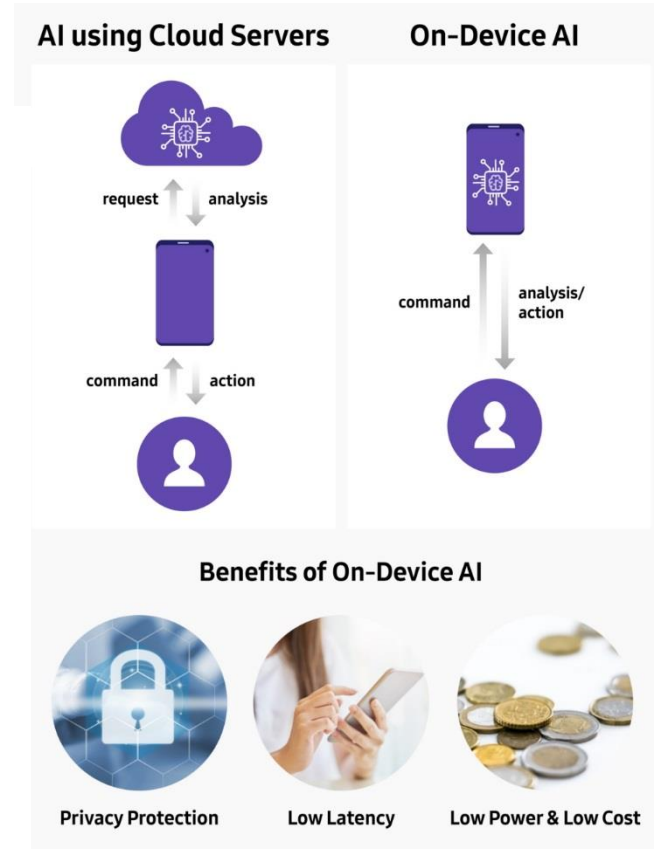
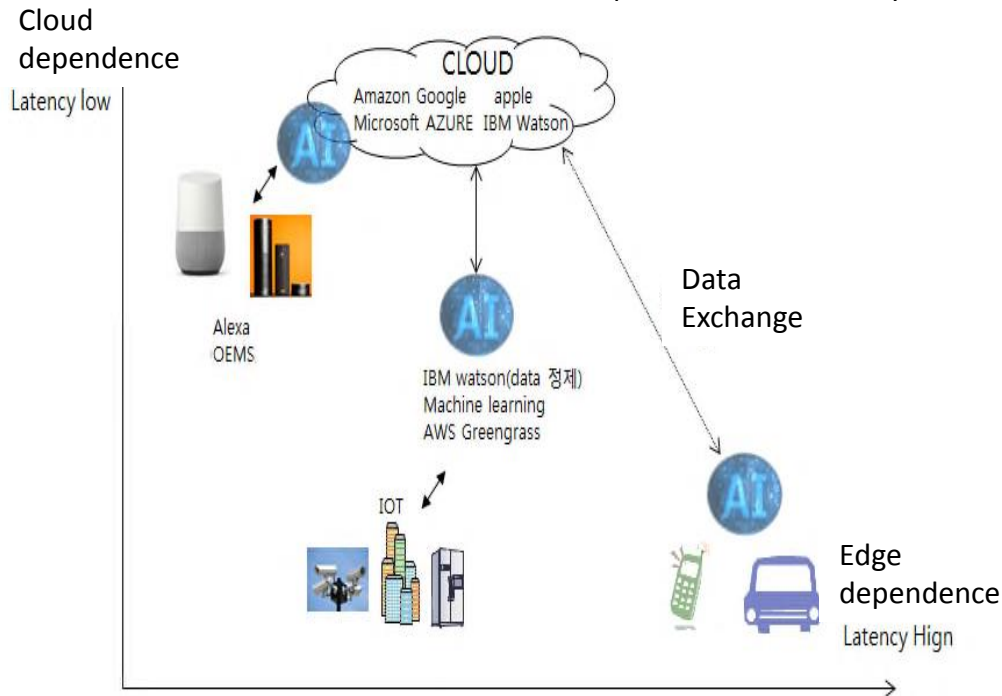


Application areas of Artificial Intelligence

2.2 AI applications in Korea (Cloud AI → EDGE AI)

- This technology will help develop Samsung's system semiconductor capacity as well as strengthening one of the core technologies of the AI era – On-Device AI processing. Differing from AI services that use cloud servers, On-Device AI technologies directly compute data all from within the device itself

<AI services based on Cloud Dependence and Latency>



Application areas of Artificial Intelligence

2.2 AI applications in Korea



100 STARTUP USING ARTIFICIAL INTELLIGENCE TO TRANSFORM INDUSTRIES

CHAT AI/BOTS



VISION & AUTO



HEALTHCARE



BUSINESS & ANALYTICS



FIN TECH & LAW



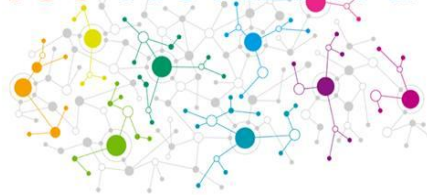
DRONE



CURATION



100 KOREA AI



OTHERS



IOT/IIOT



CYBERSECURITY



CORE AI



ROBOTICS & SMART FACTORY



EDU TECH



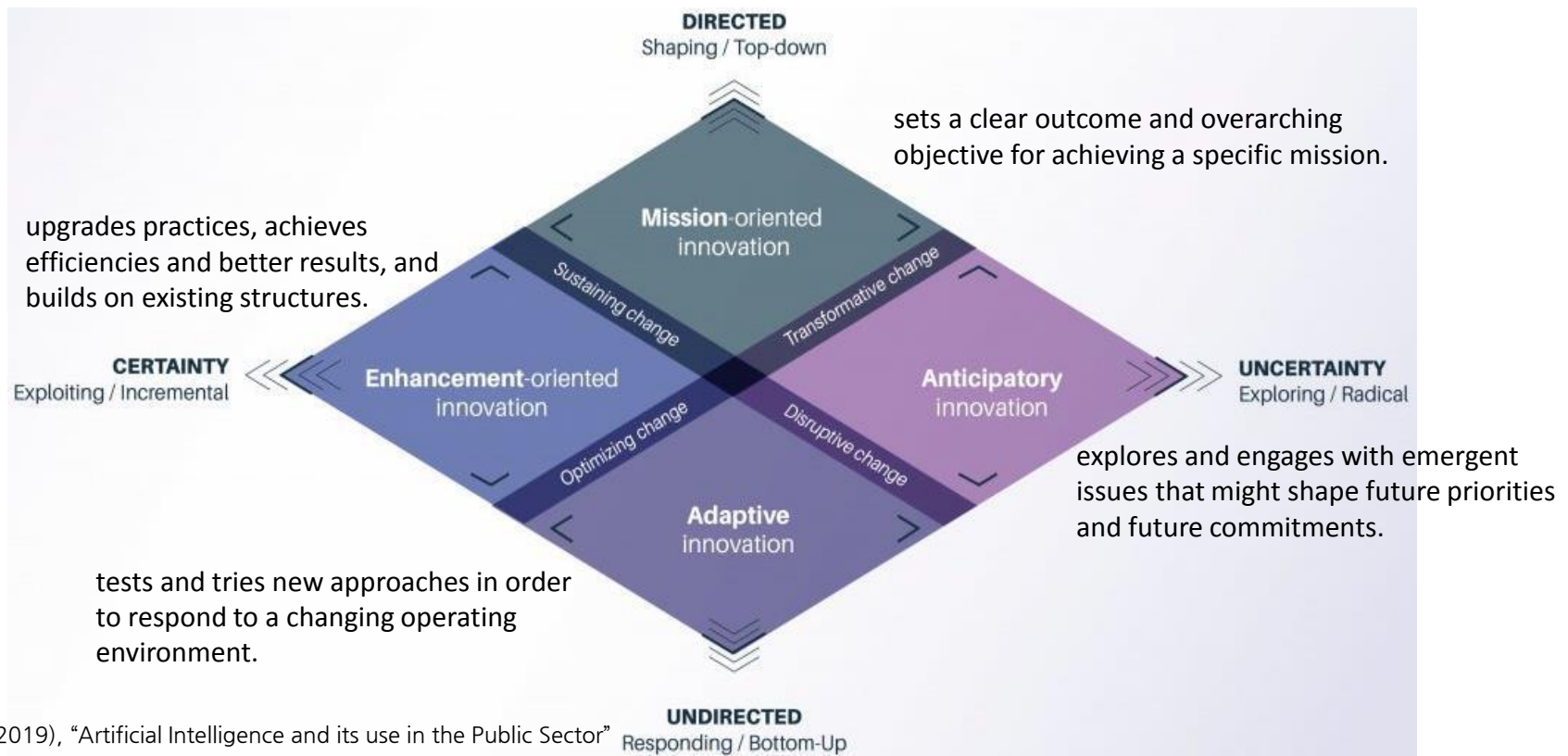
AD, SALES



Application areas of Artificial Intelligence

2.3 Artificial Intelligence in Public Sector

- **Public Sector Innovation by OPSI (The OECD Observatory of Public Sector Innovation)**
 - AI is a general purpose technology with the potential to have a significant effect on public policies and services. It can be used in ways that cut across and touch on multiple facets of innovation.



Application areas of Artificial Intelligence

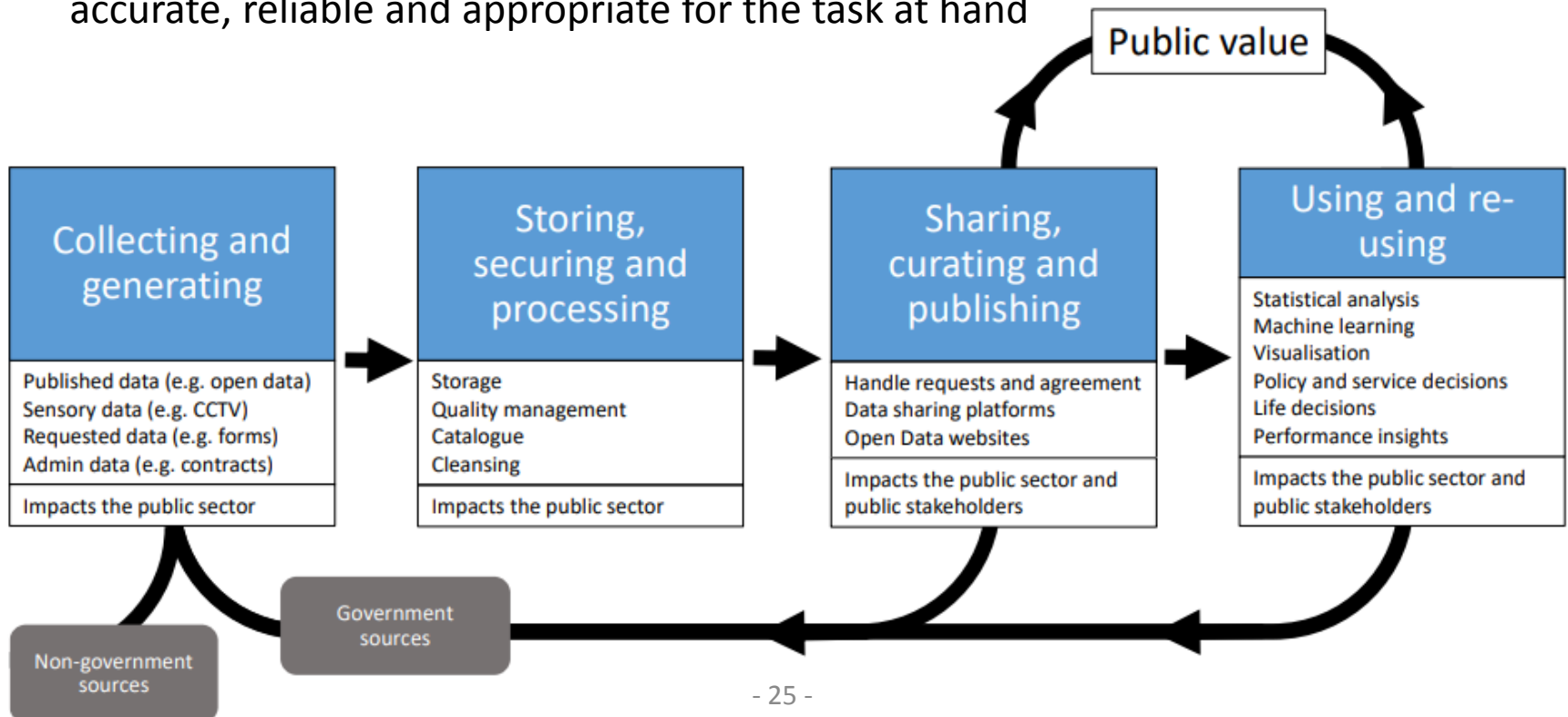
2.3 Artificial Intelligence in Public Sector

- A key purpose of the public sector is to elaborate and improve laws and policies, provide public goods and services to citizens and residents, and to deliver and maintain the tools, resources and structures needed for civil servants to perform their duties
- **Government AI roles**
 - Government as a financier or direct investor
 - Government as a smart buyer and co-developer
 - Government as a regulator or rules maker
- Within the public sector, AI could have a positive impact in several different ways. In particular, it could be used to:
 - help design better policies and make better decisions
 - improve the delivery of public goods and services to citizens
 - improve the internal operations of governments and public organizations in general.

Application areas of Artificial Intelligence

2.3 Artificial Intelligence in Public Sector - Government Data Value Cycle

- Every AI project starts from the same point: data. This is especially true of Machine Learning projects where the objective is to learn from the data. However, not all data are equal and steps must be taken to ensure that the data used for an AI project is accurate, reliable and appropriate for the task at hand



Application areas of Artificial Intelligence

2.3 Artificial Intelligence in Public Sector - Service Examples

Area	Applications
Transportation	Autonomous Vehicle, Parking, Accident prevention, Traffic management etc.
Smart City	Efficient city management, Intelligent CCTV control etc.
Medical Management	Precision medicine, Prescription, Fast Diagnosis etc.
Cyber Security	Hacking prevention, Risk management
Financial Service	Voice phishing detection and blocking, Credit crisis analysis, Interest rate decision etc.
Law Service	Judgment based on big data analysis
Natural Disaster	Drought measure, Earthquake prediction etc.
Administration service	Chatbot, customized service alarm etc.

03 Practices in Korea

- Data/AI Policy
- AI applications in Korea



Practices in Korea

3.1 Public Data Innovation Strategy (Performance in Korea)

- Establishment of an **institutional foundation** for provision and utilization of public data
 - Enactment and Enforcement of the 「Act on the Provision and Use of Public Data」 ('13.10)
 - “Public Data Strategy Committee” coordinate the government's major policies and plans on public data ('13.12)



5,272 ('13) → 24,588 ('17)



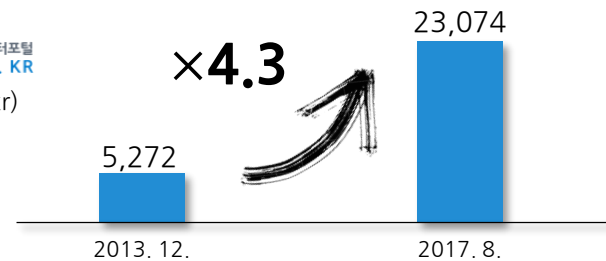
42 ('13) → 1,421 ('17)



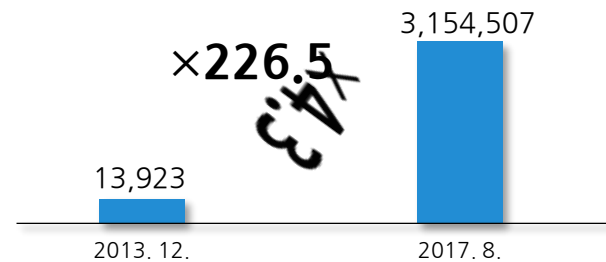
13,923 ('13) → 3,871,984 ('17)

DATA 공공데이터포털
GO . KR
(Source: data.go.kr)

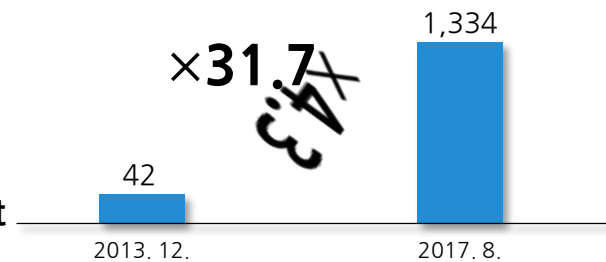
Data Open



Data Download

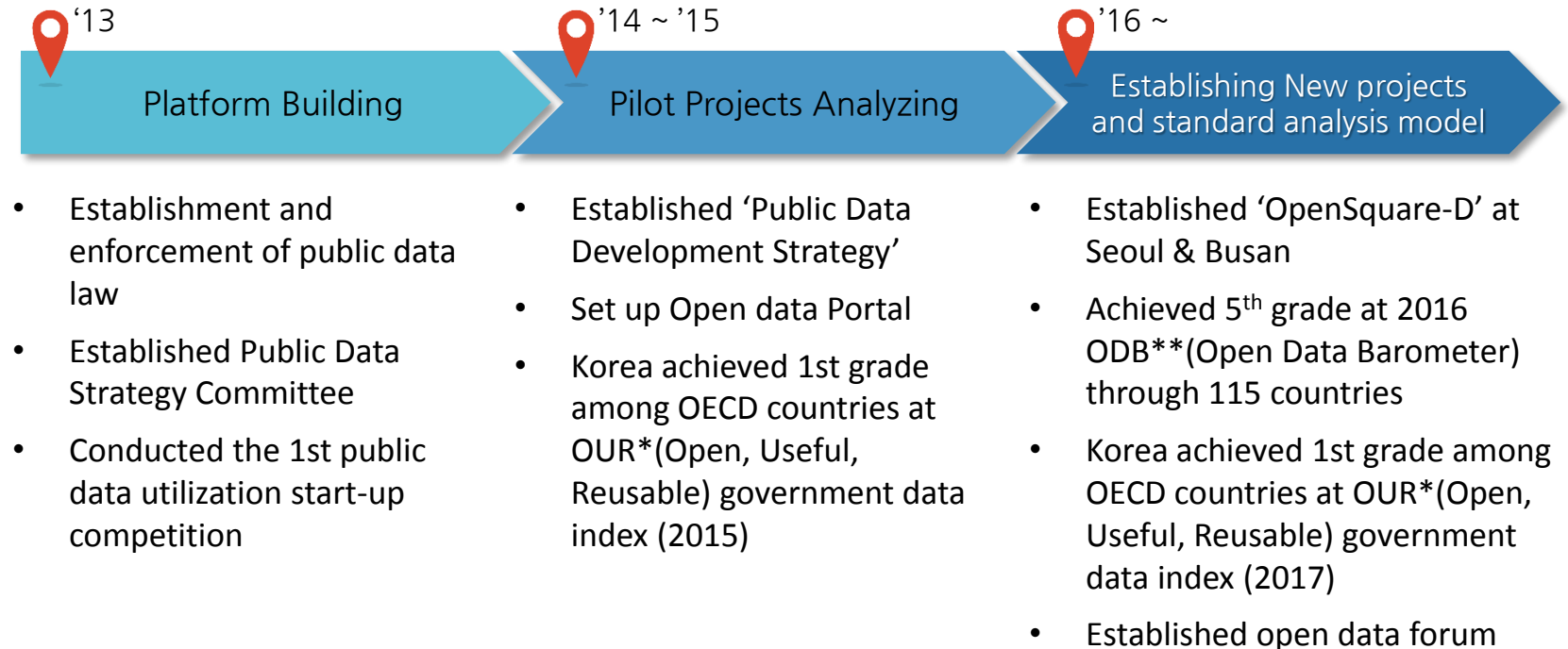


Application Development



Practices in Korea

3.2 Korea Government's Open data strategy



* OECD OURdata Index by OECD Open Government Survey

** WWW Foundation's Open Data Barometer (ODB)

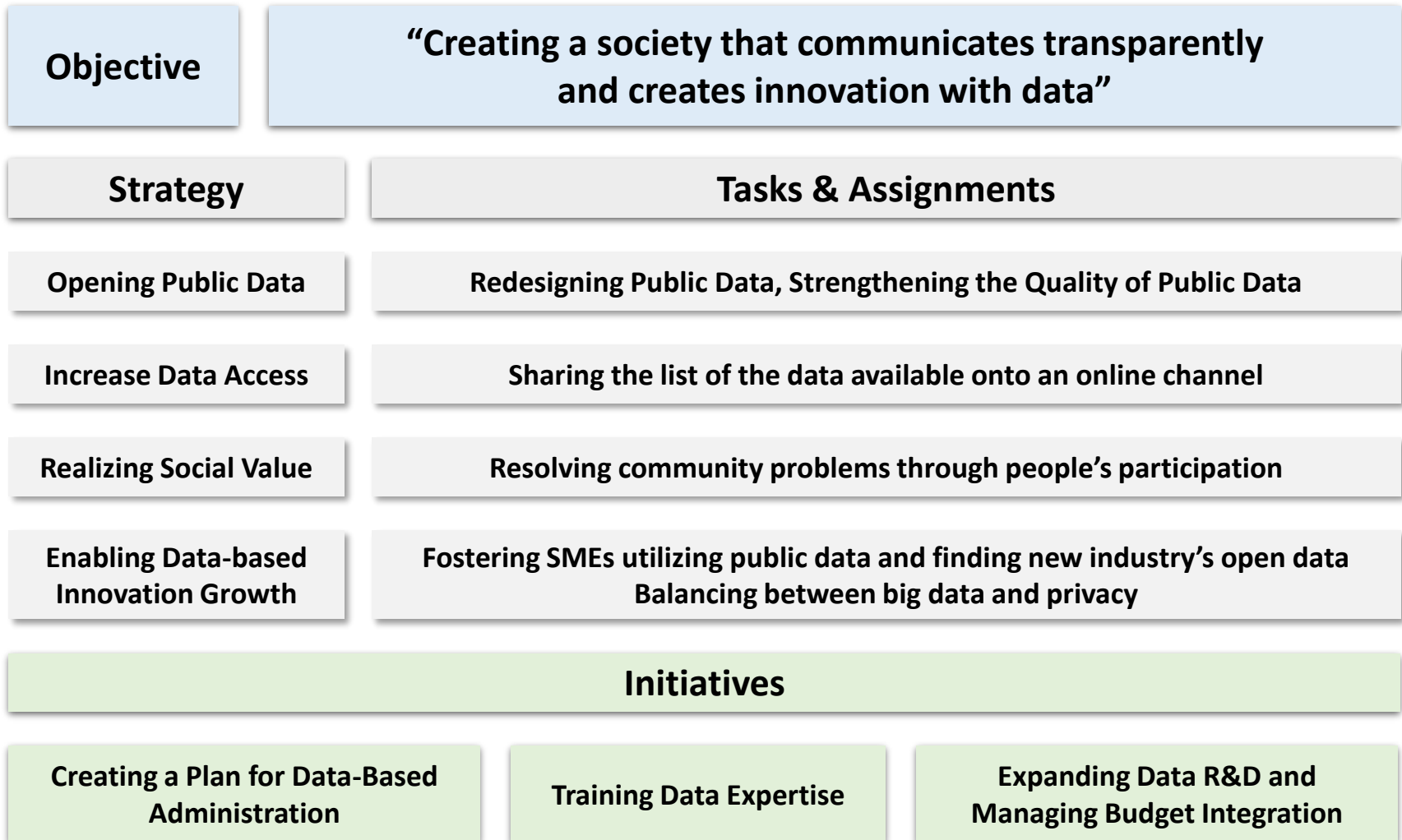
Practices in Korea

3.3 Public Data Innovation Strategy (Limitation in Korea)

- **Public Data, the asset of a specific agency**, not as a national asset
 - Public data has been recognized as an **exclusive possession** for a specific institution
 - **Supplier-centric public data** limits data delivery and identification
- **Insufficient consideration of social value**, focusing only on the economic value of data
 - Public data utilization is concentrated on creating economic value, not realizing the importance in **solving social inequality issue** and supporting the underprivileged
 - **Lack of data-driven social innovation initiatives**
- **Lack of “data cooperation”** due to the government-led top-down policy of opening data
 - Central government-led, top-down data policy implementation has resulted in **insufficient data governance** through participation by the public or cooperation with the private sector
 - **Barriers between the public and private** cause failure of data flow & convergence
- **Quantitative/qualitative deficiencies** of public data needed in the Fourth Industrial Revolution
 - Urgent need on **finding and opening data on new industries** that will lead to innovative growth such as Artificial Intelligence, Autonomous Vehicle, Smart Cities etc.
 - **Data inconsistencies and duplication**, such as lack of data accuracy and poor data structure
- **Lack of awareness and expertise** in the data-driven administration
 - Survey shows **8 out of 10 organizations have no regulations** regarding data utilization
 - A lack of skilled data professionals in the government, even though determining the quality of **public data is directly linked to the expertise of the person in charge.**

Practices in Korea

3.4 Public Data Innovation Policy (2018)



Practices in Korea

3.4 Public Data Innovation Policy (Key Action Plan1)

- Opening and Utilizing Public Data Related to 'Social Value'

- **Finding public data** on Environment, Safety, Social Welfare and Community
 - Exploring, categorizing and publicizing data through demand analysis & research activities, etc.
- **Analyze and utilize public data** to enhance the quality of public service
 - Promoting the usage and analysis on big data - e.g. Searching for candidates on welfare blind spots
 - Establishing the big data standard analysis model in safety & social welfare, open for all organizations
 - Dissemination of the big data standard analysis model
- **Use cases of big data standard analysis model**
 - Selection of areas vulnerable to ambulance arrival and decision on pre-placement
 - Extracting CCTV blind spots and exploring areas for additional installation
 - Early recognition of inconvenience (civilian complaints) from social minority groups

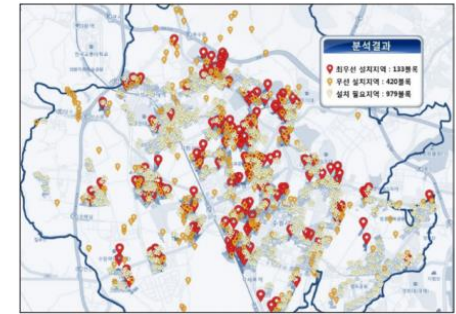
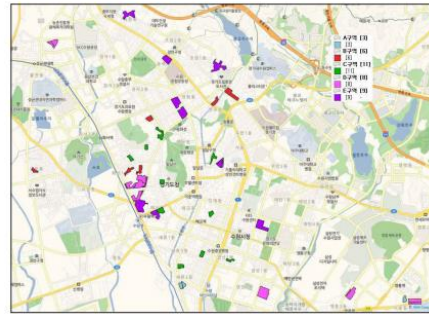


Practices in Korea

3.4 Public Data Innovation Policy (Key Action Plan2)

- Resolving Community Problems and Strengthening Publicity through Participation of the People

- **Active participation from local residents** with concern over the common issues of the community
- **Efforts on improving the quality of the public service** with help from the citizens
- **Public Participatory Geographic Information Systems (PPGIS)**
 - A tool that can be used to tell a story about what is happening in our communities
- **Project on “Crowd Mapping”**
 - Local residents voluntarily point out the problems of the community, and suggest a solution based on geographical data
e.g. Air quality, drought/flood issue



Distribution of Candidate Areas for CCTV Installation



Regional Distribution of Traffic-Vulnerable Residence

Practices in Korea

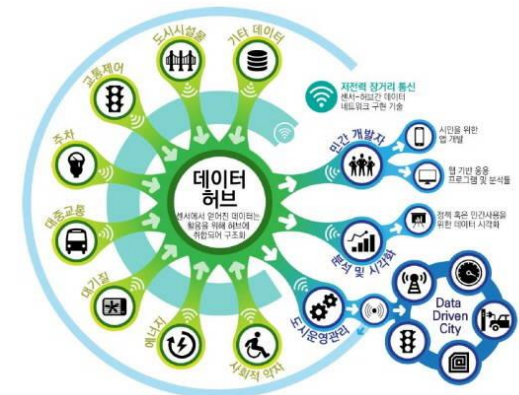
3.4 Public Data Innovation Policy (Key Action Plan3)

- Enabling Public-Private Cooperation Based on the Usage of Public Data

- **Public-private cooperation**
 - **Open Data Forum (ODF)**, the organization for public-private governance, consists of Civil society, Enterprise, Academia, Media, Government & Public Institutions
 - **Public-private coproduction of public data policies** to achieve the state of open government
 - **Promotion of “Civic Hacking”**, the participation in activities to solve problems using new tools & technology, which creates socioeconomic value through interactions among data users
- **Cooperation of central and local government**
 - Surveys on the use of public data are conducted by the local government, based on the managerial system support (e.g. data registration and management) from the metropolitan government
 - **Data Innovation City**: Publicizing the data of Traffic & Energy from the local government



http://www.molit.go.kr/USR/WPGEO201/m_36673/DTL.jsp



Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Vision and Strategies)

Vision | The country that safely uses **Data** and **AI**

Objective

Leader of Data & AI Economy

**Achieve USD \$30 billion
in data market size**

**Fostering 10 Unicorn Companies
Related to AI Technology**

Strategy

Data

- Production
- Delivery
- Utilization

Convergence

- Institutional
- Entrepreneurial
- Spatial

AI

- Infrastructure
- Technology
- Industry

Policy Tasks

Vitalizing the Lifecycle of Data Value-chain

Establishing a Leading AI Innovative Ecosystem

Facilitating Convergence between Data & AI

Data Accumulation

Constructing
Delivery Network

Expanding the
Data Usage

Establishment of AI
Hub

Developing AI
Technology

Making AI Utilizing
Ecosystem

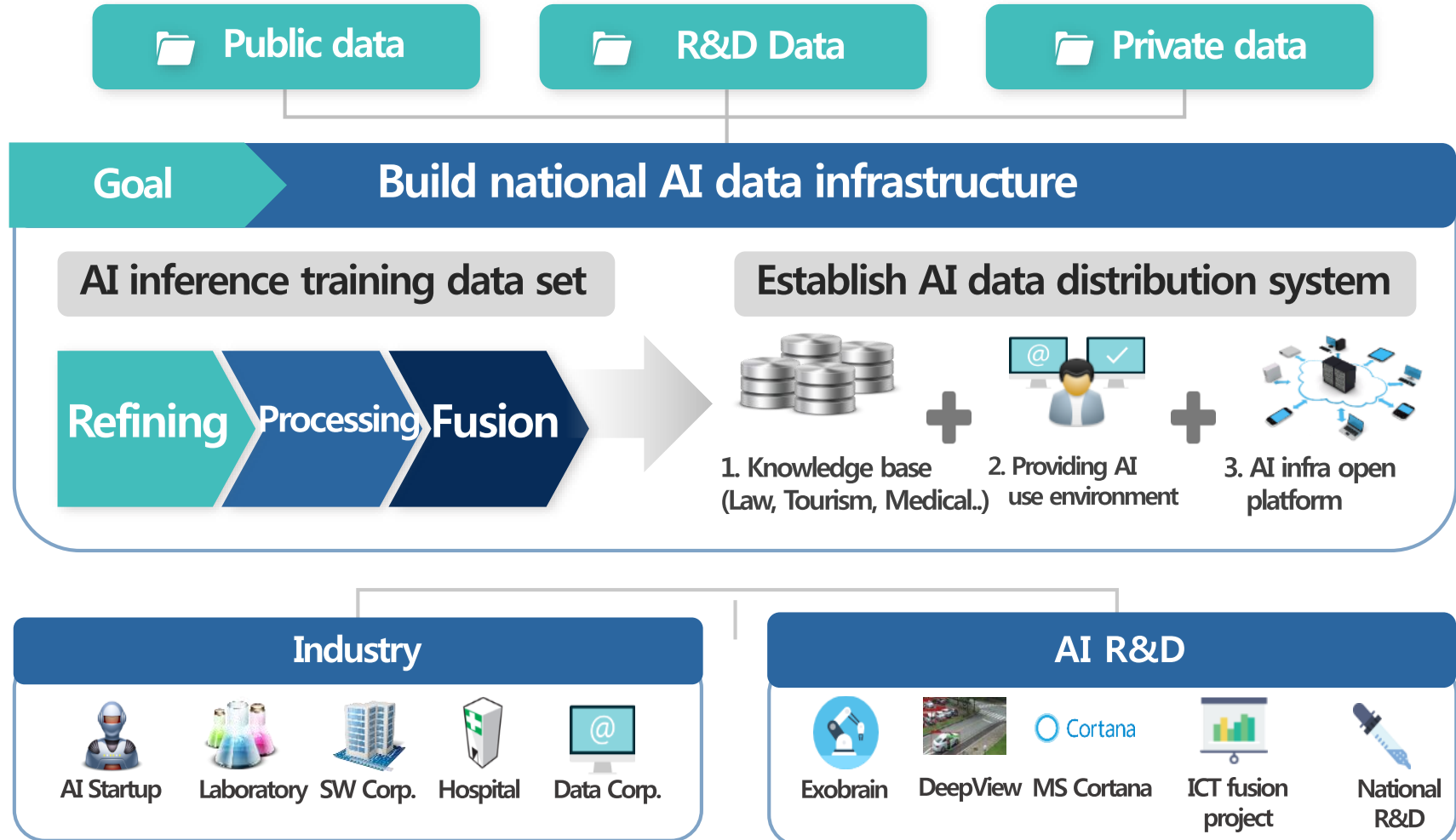
Forming AI
Convergence Cluster

Diffusing Demand
for Industry

Institutional
Convergence

Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Goal)

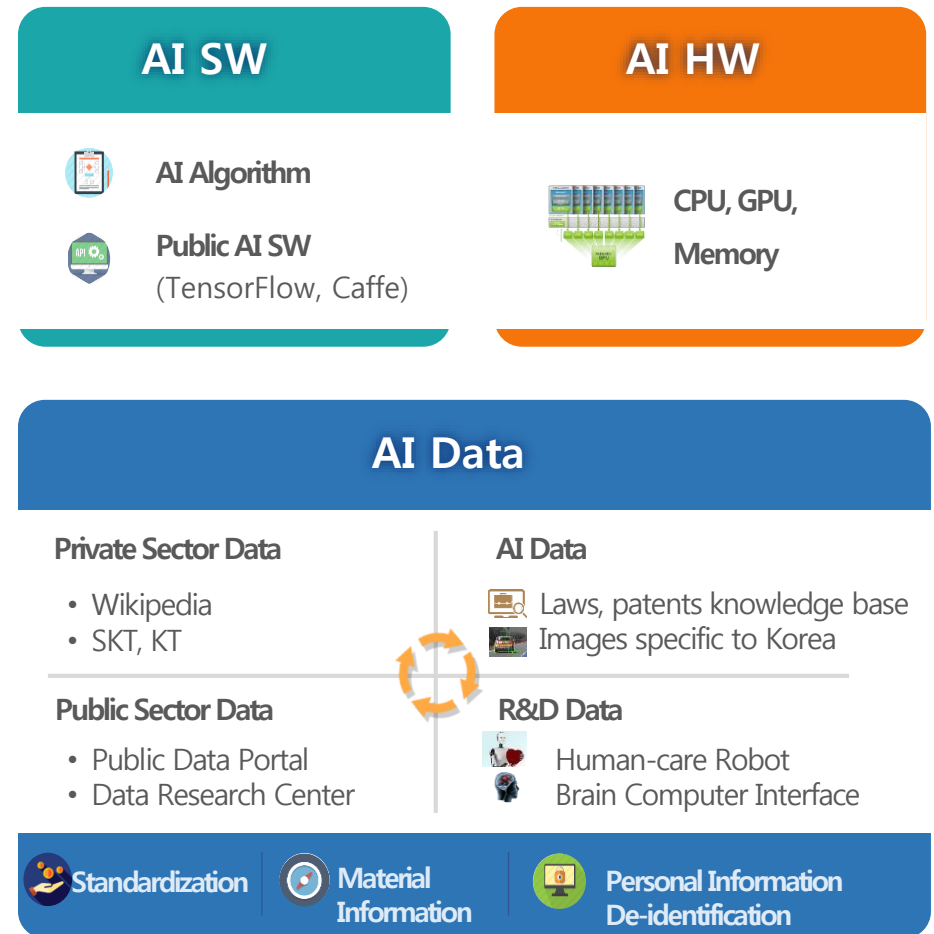


Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Goal)

- Overview of building of AI Industry Infrastructure Project

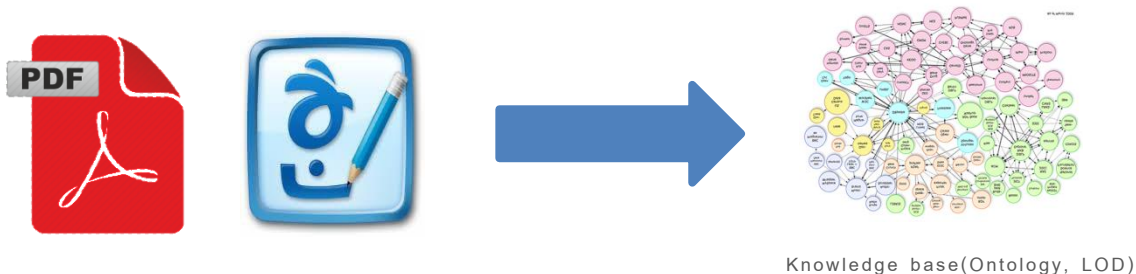
- Create 'AI Open Innovation Hub' to provide one-stop support services for infrastructures needed for development and commercialization of Artificial Intelligence technologies
 - ✓ Aggregation of government AI algorithms(open source/open API), machine learning data and large scale computing resources



Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Goal)

- Build massive data sets that machines can learn
 - Establishment of national data management system to enable AI machine learning
 - Public data is converted into a machine-readable format and opened
 - Open in real time to systematically accumulate sensor data for IoT device production
 - Providing smart city's IoT data in connection with data platform

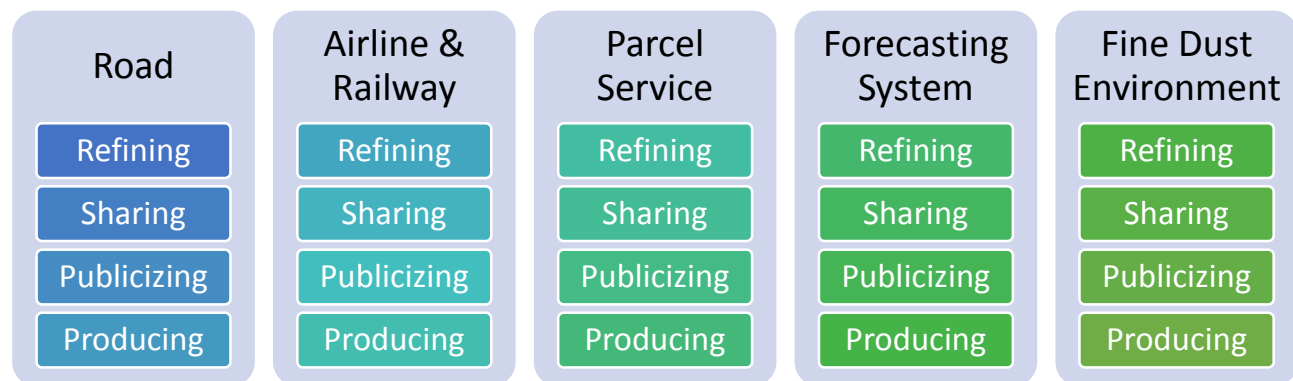
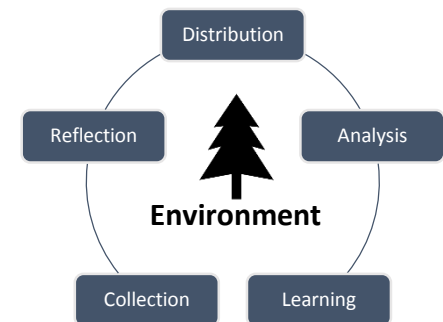
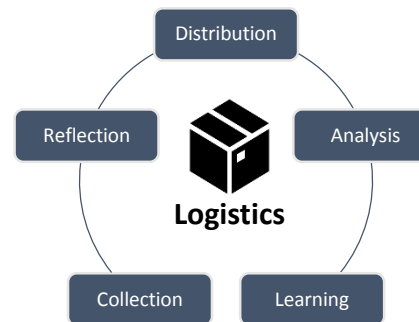
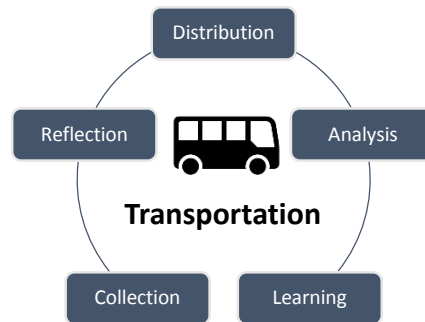


Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Key Action Plan1)

- **The Concept of Big Data Platform & Center**

- **Collection / Analysis / Distribution of data from various fields** (including Finance, Environment, Culture & Media, Transportation, Land & Infrastructure, Healthcare, Energy, Logistics & Distribution, Agriculture, Manufacturing)
- Systematic production and management of big data at SMEs & Universities



Practices in Korea

3.5 Data/AI Economic Activation Plan 2019 (Key Action Plan2 & 3)

- **Generating Public Demand for National Intelligence Information**
 - Converting national intelligence projects into **Data and AI project** based intelligence initiatives
 - Transforming information systems operated individually by institutions into **platforms integrated by social functions**, such as safety and welfare
 - **Renewing the outdated systems** with intelligent methods that enable continuous learning of AI

Practices in Korea

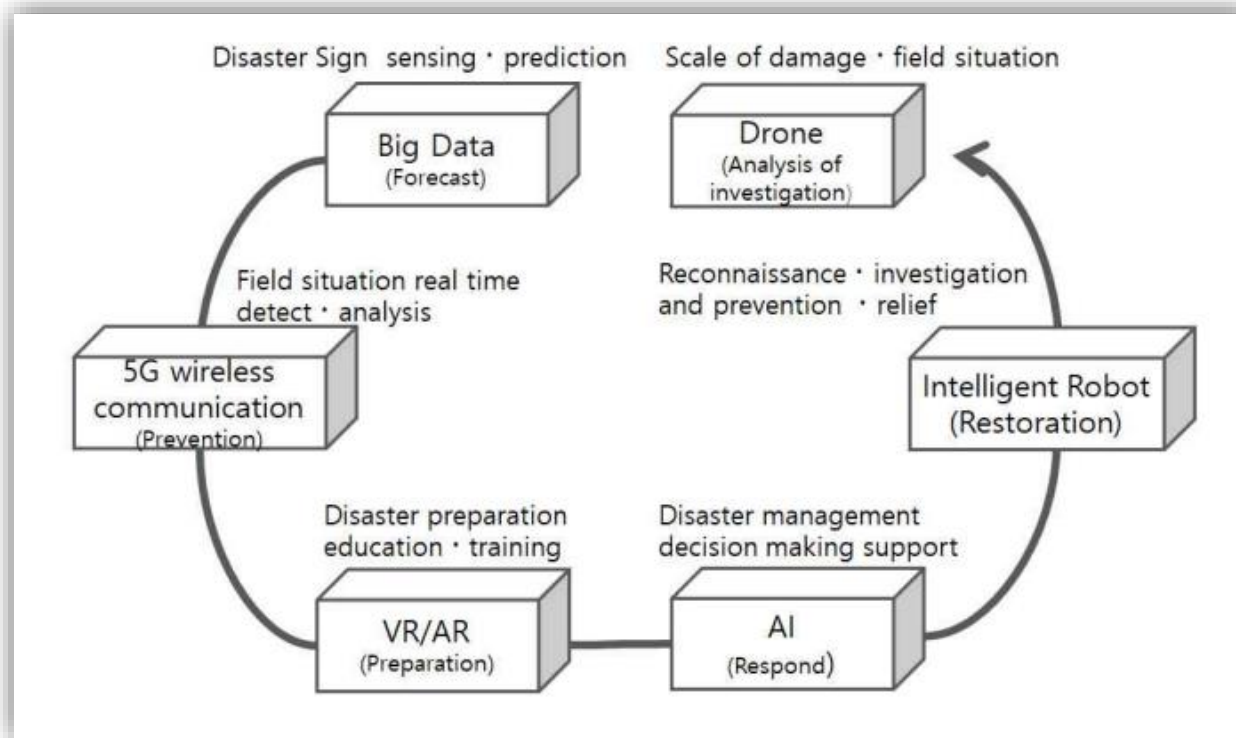
3.6 AI and Bigdata convergence - AI (intelligent) based precision medical solution

< Dr. Answer >

- AI doctor who answers everything through medical big data and support doctor's diagnosis and treatment.
 - **Dr. Answer**(Ai, network, software, er)
-
- 'Dr. Answers' is a **database** of various **medical data** (diagnostic information, medical images, genome information, life Pattern, etc.) to analyze, predict, diagnose, and treat disease Supporting Services.
 - Precision medical hospital information system being developed for the first time in Korea based on cloud to provide **Korean-style precision medical services**.
 - Asan Medical Center, 25 medical institutions and 19 ICT / SW companies including Cacao Brain participated.
 - Furthermore, it is expected to provide a solution for the **reduction of the medical expenses** of the general public.

Practices in Korea

3.6 AI and Bigdata convergence - Smart disaster safety management system



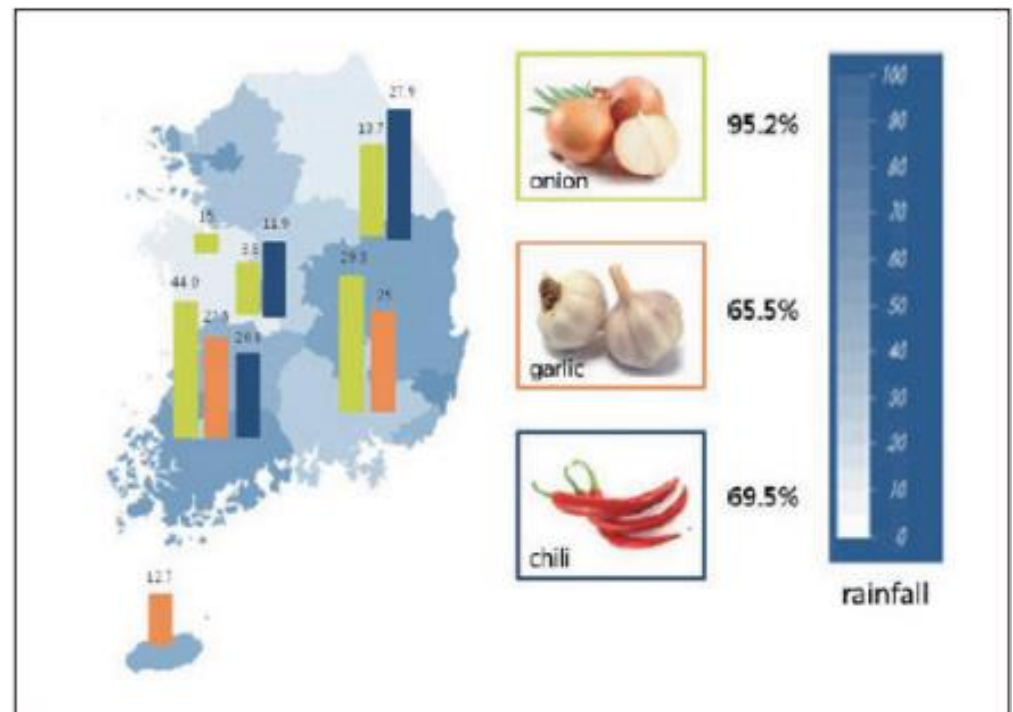
(Ministry of science and ICT, 2019; Heau-Jo Kang, 2018)

- **Ministry of the interior and safety** and **Ministry of science and ICT** will promote the “Smart Disaster Safety Management system” to utilize **Big Data, Next Generation Communication(5G), Virtual Augmented Reality, Artificial Intelligence, Intelligent Robot and UAV** for disaster safety.

Practices in Korea

3.6 AI and Bigdata convergence - Weather data and Predicting agricultural productivity

- There is a need to support **scientific agricultural management** through **climate** and **weather data** analysis.
- **Korea Meteorological Administration and Rural Development Administration** Provide **forecasting scenarios** that reflect weather conditions and make use of these forecasts.
- **Decision making** through forecasting model of crop yield considering various weather variables.

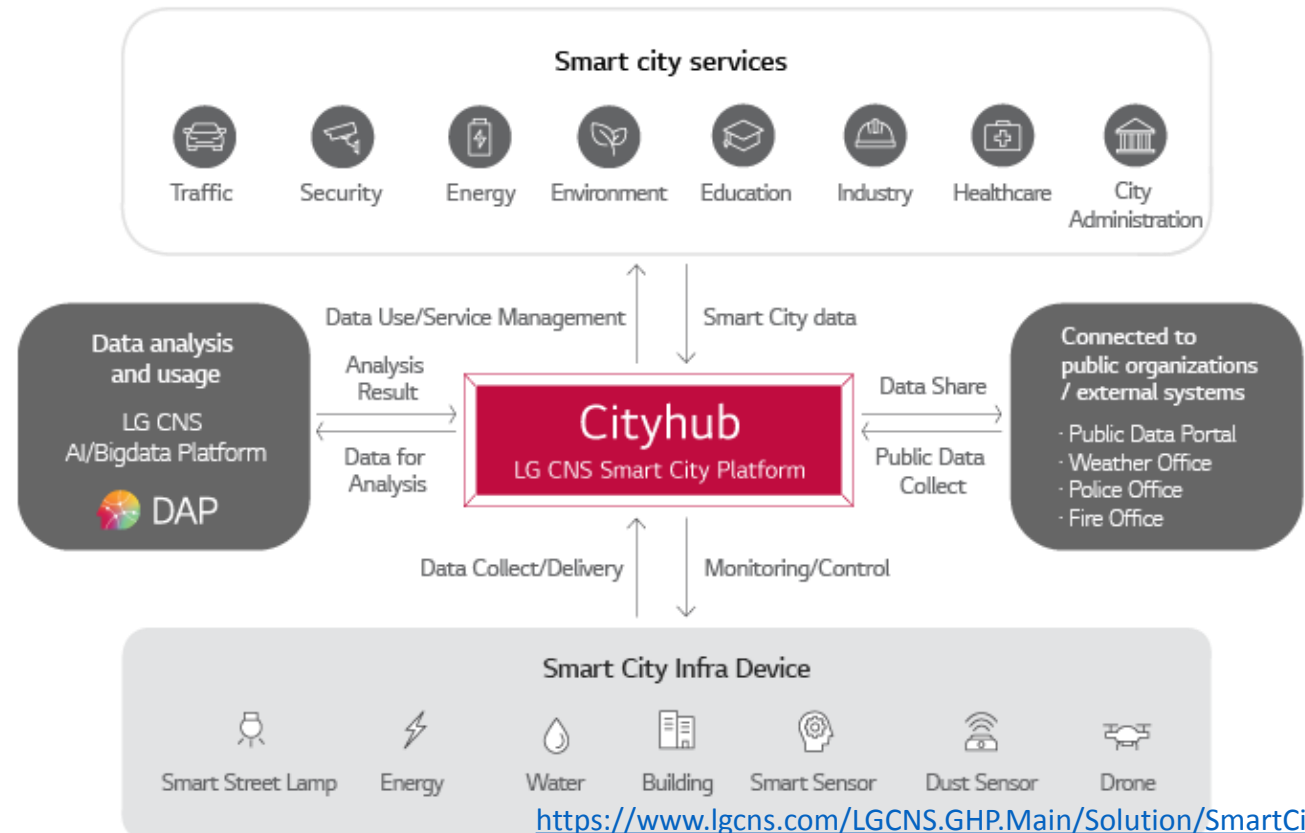


<Prediction of Crop Production According to Climate Scenario>
(Ministry of the interior and safety)

Practices in Korea

3.7 AI for Smart City

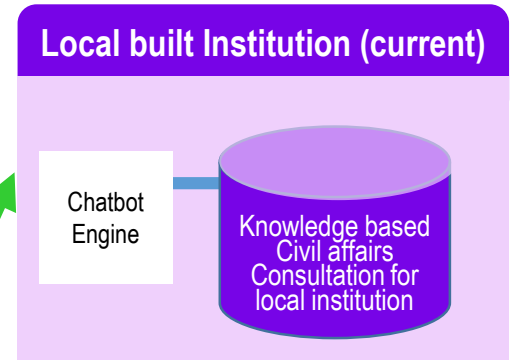
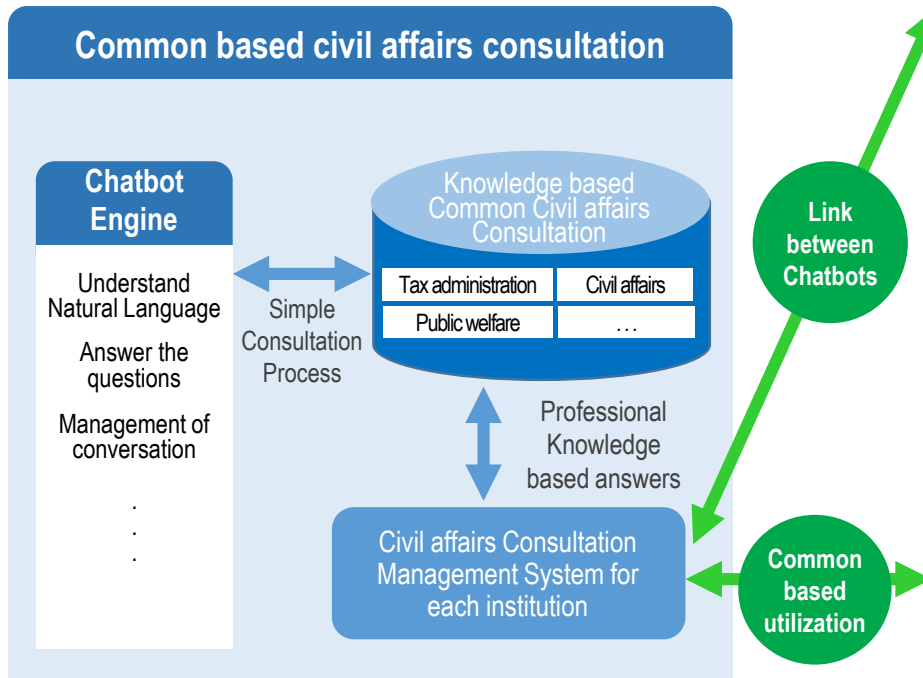
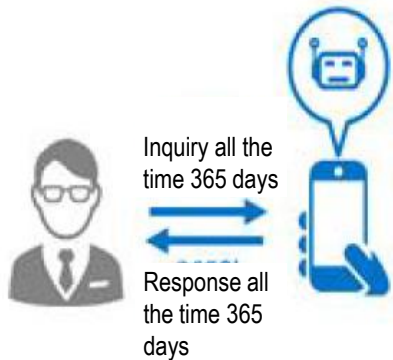
- LG CNS Cityhub is a data-driven platform, which shares information by collecting and analyzing city data. And also provides services in various areas that can improve the quality of citizen's life by storing, managing, analyzing data that are gathered through facilities, systems and external organizations



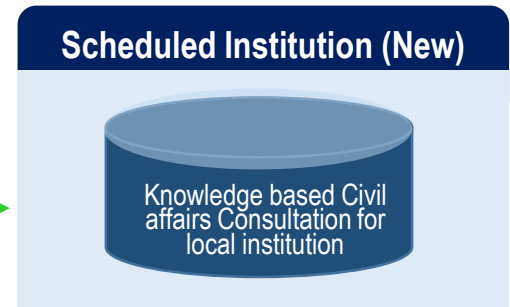
Practices in Korea

3.7 AI for e-Government (Smart Administration)

Example) Civil Affairs Consultation 365 with chatbot



- '버비', Ministry of Justice
- '세정봇', Gyeonggi-do
- '뚜봇' etc., Deagu city

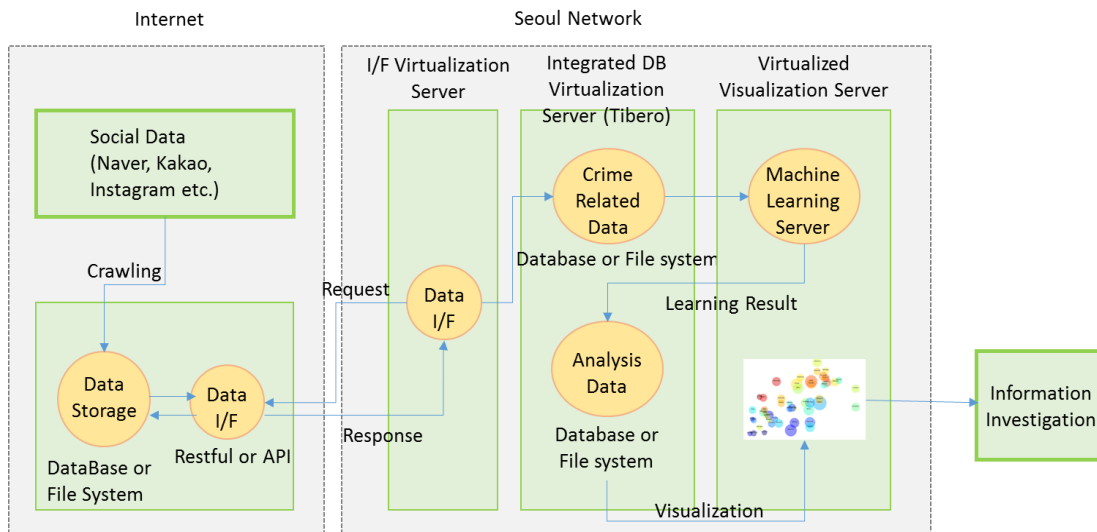


- Start from popular consultation (Passport, Driving license, Penalty consultation etc.

Practices in Korea

3.7 AI for Crime Investigation

AI based Crime investigation supporting project Platform in Seoul



<https://opengov.seoul.go.kr/press/15928852>

AI Assists South Korean Police Finish \$18 Million Cryptocurrency Ponzi Scheme

By Samantha Mitchell - April 8, 2019



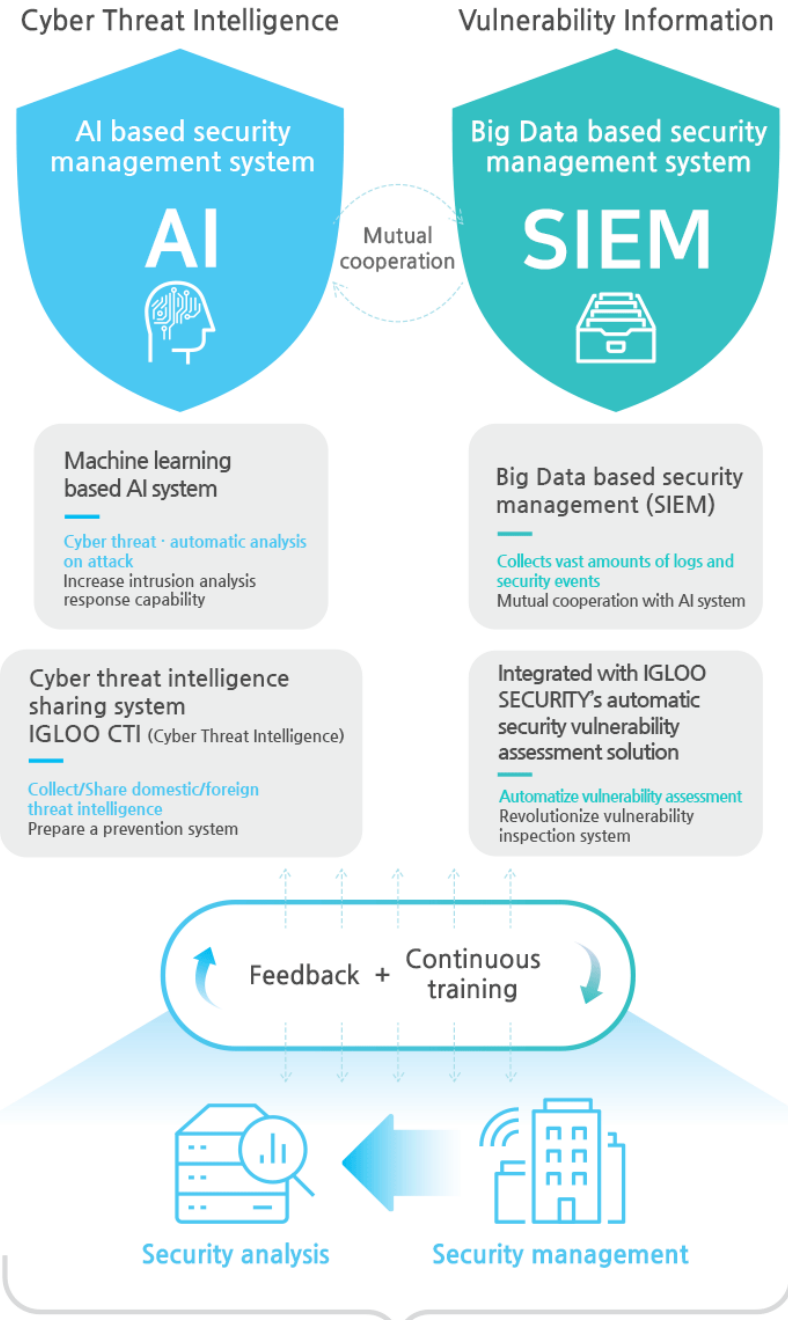
The [suspects behind an infamous crypto Ponzi scheme have been arrested](#) by the South Korean police. This has happened because of the assistance offered by the Artificial Intelligence system. The report was published by the Korea JoongAng Daily, a local English-language news outlet.

Practices in Korea

3.7 Daegu D-Security

- (Daegu's AI-Based Intelligent Security Control System)

- The first AI-based cyber breach response system in South Korea
- Daegu Metropolitan City aims to get a world-top AI-based intelligent security control system that can strengthen the city's IT competitiveness.
- a) developing a machine learning-based AI system which analyzes attack patterns through continuous and repeated learning,
- b) getting 'D-Knowledge Center' which collects latest threat intelligence real time, and
- c) creating 'security vulnerabilities auto-detection system' which can mount early responses by automatically detecting vulnerabilities
 - Automatized alert event processing through supervised learning
 - Unknown threat detections by unsupervised learning



04 Implications



Key Issue and solution

4.1 Issues and Policy - Data regulatory and privacy governance

- **Legal System Improvement to Promote Intelligent Information Service**
 - **Revision of the Personal Information Protection Act**, which includes the definition of alias processing and duty of safety measures for alias information, to improve the data utilization system ('19)

<Main point of Amendment of Personal Information Protection Act>

- The Act Introduced the concept of **Pseudonymous data** to increasing data use
- Strengthen the responsibility of personal information processors for data utilization
- clarify the judgment criteria of ambiguous personal information

Key Issue and solution

4.2 Issues and Policy - AI ethics and Policy

- **AI ethics** is expected to be a **key challenge** in the future.
- Ethical use of data & AI and dysfunction prevention.
- **Human-centered** Plan to prepare **AI ethics policy(2020)**
 - **Preparation of 'Ten Principles of Use of AIs'** such as proper use, proper learning, linkage, safety, security, privacy, respect and self-regulation, fairness, transparency, and feasibility (**AI Network Social Promotion Committee, '18.7)**
 - **Human-centered AI ethical initiatives** to support data and AI's ethical use and prevent adverse effects ('20)
 - AI ethics for the implementation of intelligent government in Korea will be enacted in order to establish ethical standards and guidelines that government AI services should follow

Thank You!

Q&A

