

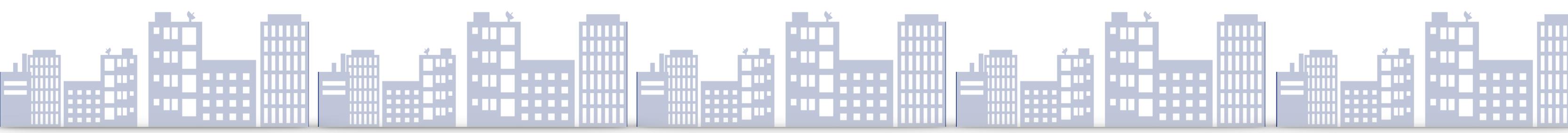
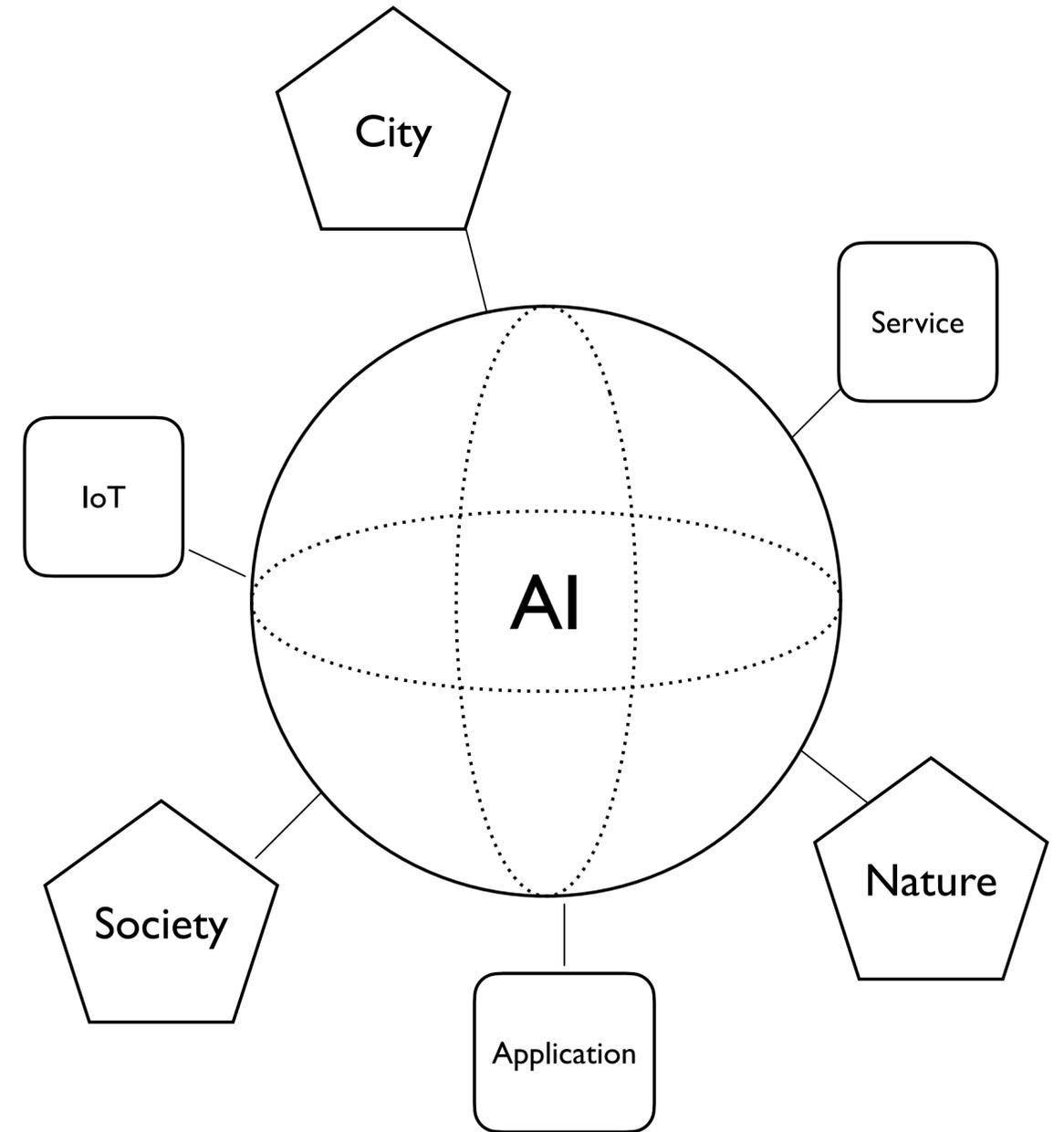
2021.06.30

# AI and The Transformation of Society: The Cases of Busan National Pilot Smart City

**Jong-Sung Hwang**

Master Planner, National Pilot Smart City

Lead Researcher, National Information Society Agency



# Confusions

confusions

# Humans are more and more dependent on AI & Data

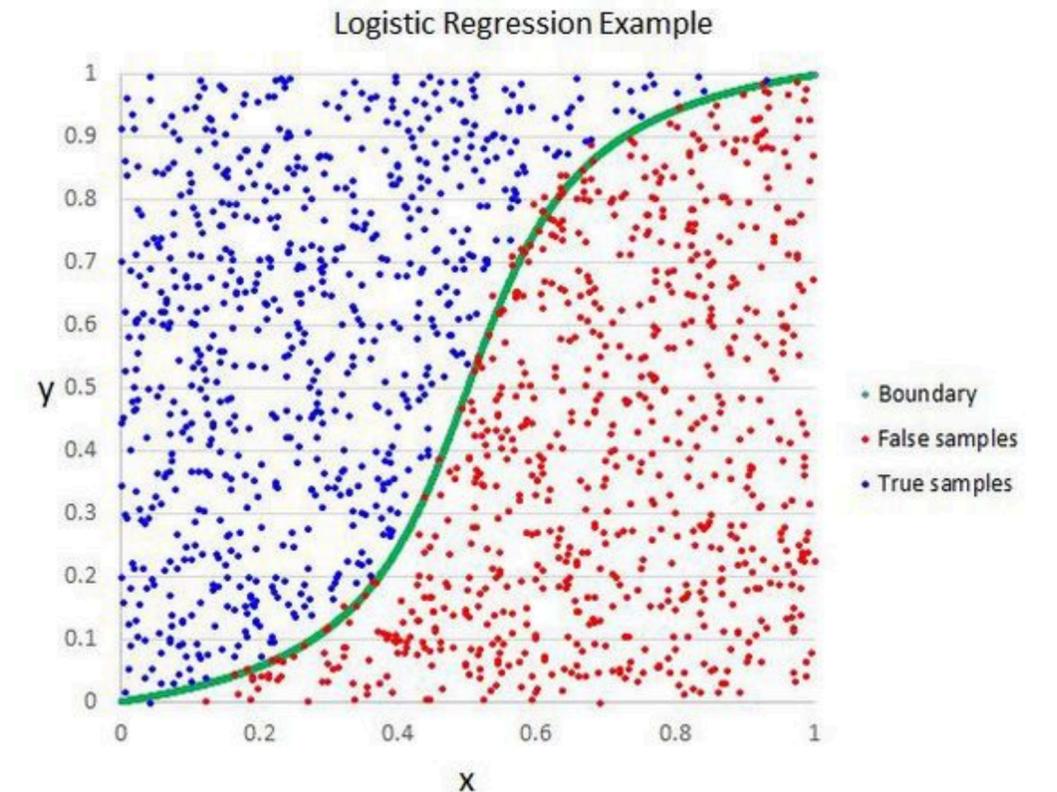
	Individual	Society
<b>Known Knowns</b> We know that we know	Smart Assistant	Automating City & Services
<b>Known Unknowns</b> We know that we don't know	Enable what can't do	Solution to Wicked Problems
<b>Unknown Knowns</b> We don't know that we know	Personal Preference	City Experience & Satisfaction
<b>Unknown Unknowns</b> We don't know that we don't know	Consulting/Guiding	Crisis Management

The current AI has not reached a genuine intelligence

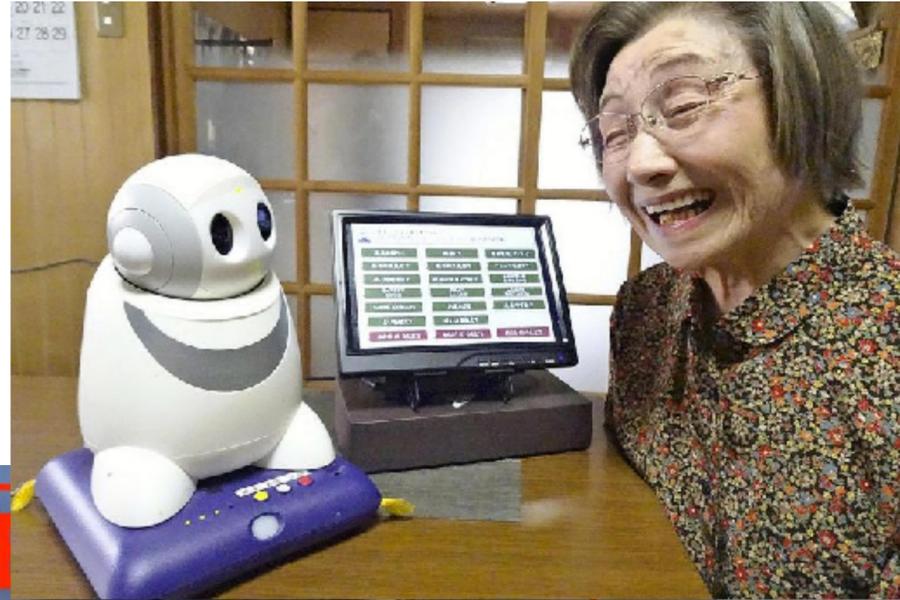
**AI**  
Artificial Intelligence

vs

**IA**  
Intelligence Augmentation



# Anthropomorphism in AI causes many confusions



BI



- ① Mental Relationship with People
- ② User Friendly Function & Design
- ③ **Unjustifiably High Expectations**
- ④ **Fears for Competitions against Technologies**

<https://www.tandfonline.com/doi/full/10.1080/21507740.2020.1740350?scroll=top&needAccess=true>

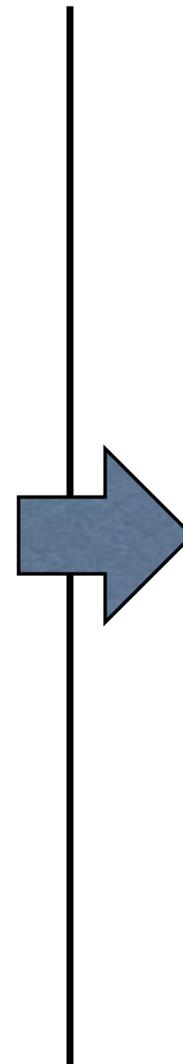
# AI has many problems as a decision-maker

## Decision by Human

Rational Choice

Political Preference

Personal Factors



## Decision by AI

Data-driven

Bias

Black Box

Unexpected Results  
(Algorithm Collusion)

# Paradigm Shift & Augmented Society

Paradigm Shift & Augmented Society

# The Core of the 4th Industrial Revolution is Artificialization



Industrial Society

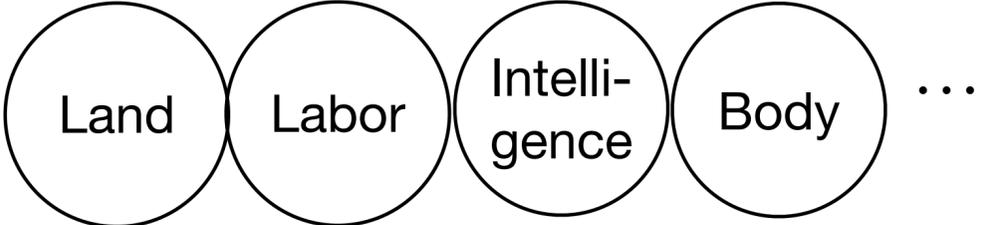
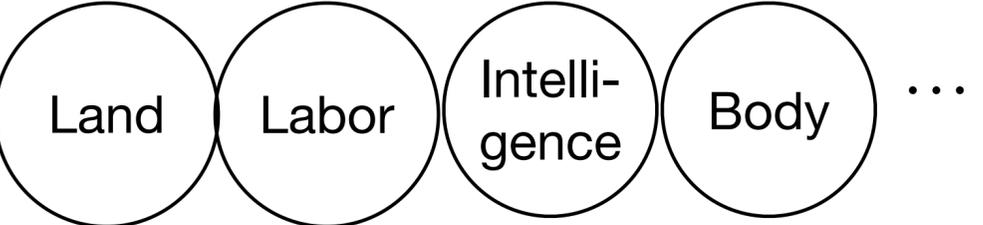
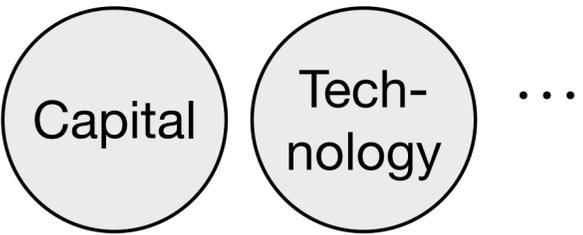
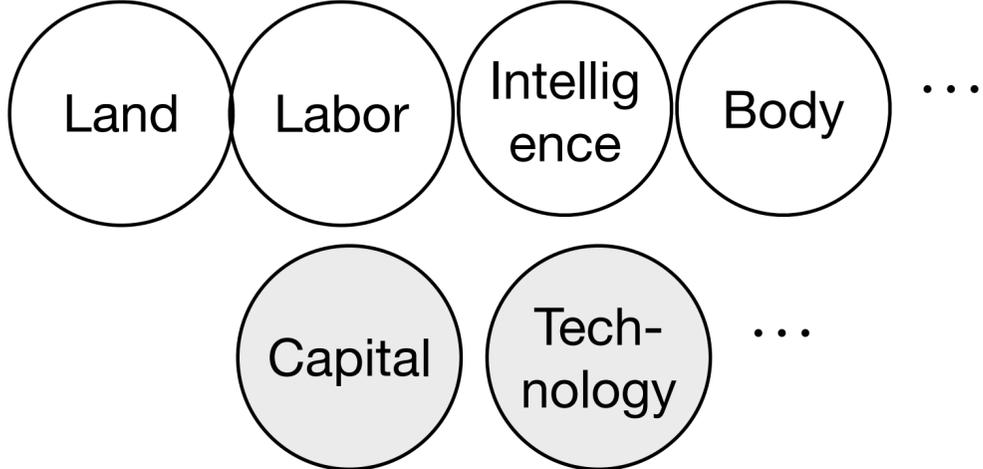
Information Society

Intelligent Society

# Artificialization

## Industrialization

## Artificialization

<b>Naturally Created</b>		
<b>Artificially Created</b>		

# AI transforms the relation between human and technology

## Control

vs

## Augment



# AI creates **Augmented Society** enhancing citizens' capabilities

## Cognitive Augmentation



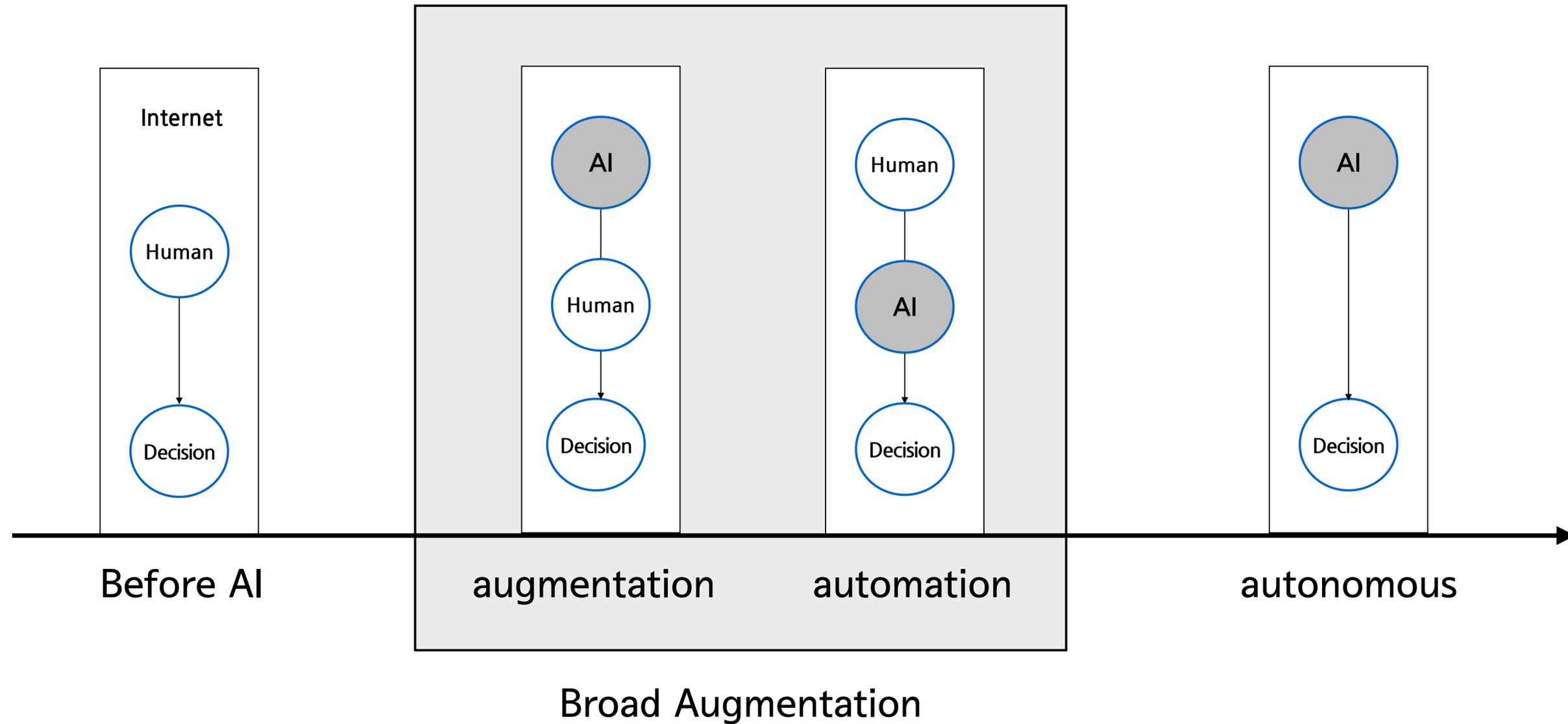
<https://pxhere.com/ko/photo/1553941>

## Physical Augmentation



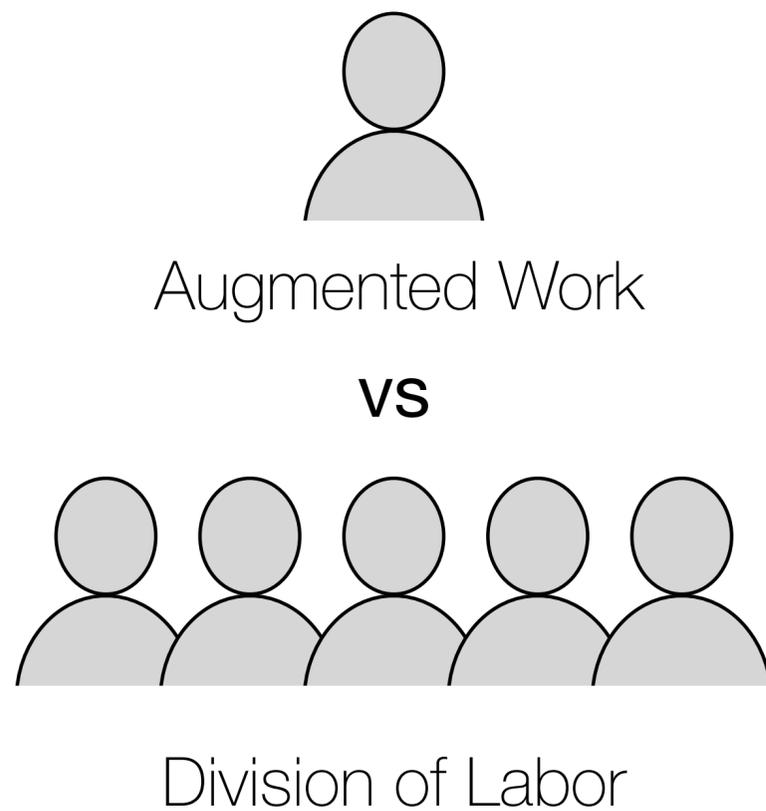
<https://i.insider.com/53e913246da8115b48273a39?width=1100&format=jpeg&auto=webp>

# Augmentation vs Automation

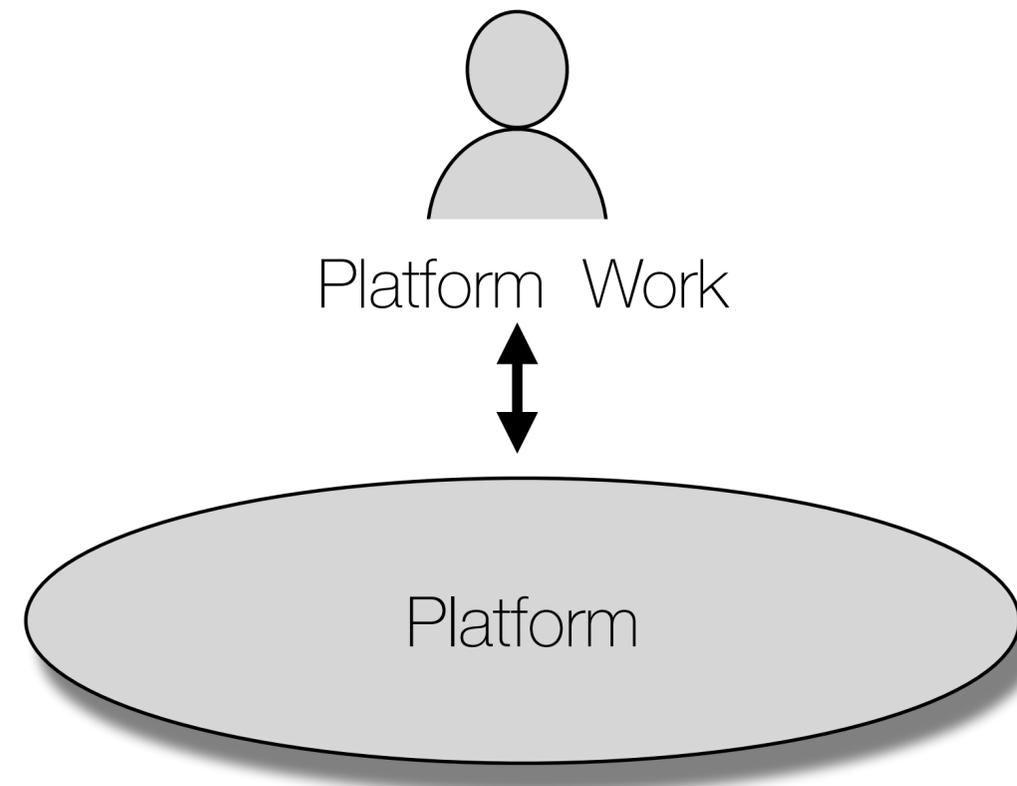


# Transformation by Augmentation

Independence of Individual



Dependence on Platform



# Platform is the most critical factor in the AI society

## Types for Platforms

System-specific

System-agnostic

Open

Android OS

One M2M (IoT platform, EU)

Internet

**Platform Interoperability**

Closed

iOS, Amazon

Smart City Data Hub (Korea)

Telecommunication

Geospatial Data

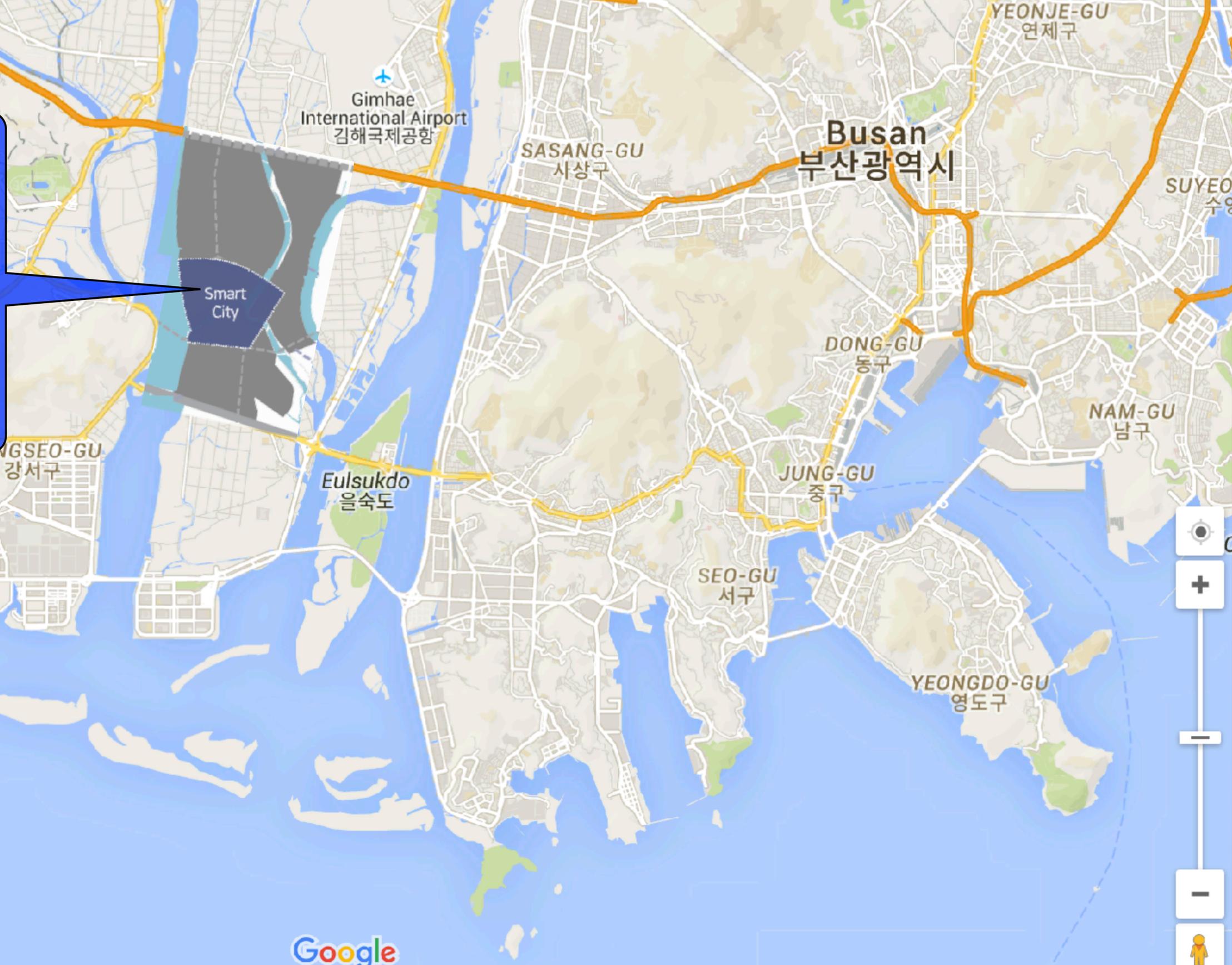
## New Social Development in the era of AI (by Smart Cities)

- |   |   |   |
|---|---|---|
| ① HW-driven development                   | ⇒ | SW & Data-driven development            |
| ② Vertical development (Silos by domains) | ⇒ | Horizontal development (interconnected) |
| ③ Closed & Controlled system              | ⇒ | Open & Flexible innovation ecosystem    |
| ④ Economy of scale ➡ urbanization         | ⇒ | Scale-free ➡ (counter-urbanization)     |

# Busan National Pilot Smart City

## Busan EDC National Pilot Smart City

- Area : 2.8Km<sup>2</sup>
- Period : 2018~ (2021~)
- Population : 8,500
- Houses : 3,380



Google

# Busan Pilot City aims to be the world first Augmented City

Augmenting citizen with robotics, AR/VR, and other 4IR technologies

Robot → Physical Augmentation

AR/VR → Cognitive Augmentation



Guardian Selects Technology

**Where is the boundary between your phone and your mind?**

As our online existences become less distinct from 'real life', experts raise concern about the growing power of big tech

Extended Self  
Interdependent Self

# Strategy1: Platform of Platforms (Platform-Interoperability)

Platform is a new common good



<https://www.flickr.com/photos/perspective/37905648152>



<https://www.pexels.com/photo/police-blue-sky-security-surveillance-96612/>



[https://live.staticflickr.com/3159/2625260355\\_aa290f37d2\\_b.jpg](https://live.staticflickr.com/3159/2625260355_aa290f37d2_b.jpg)

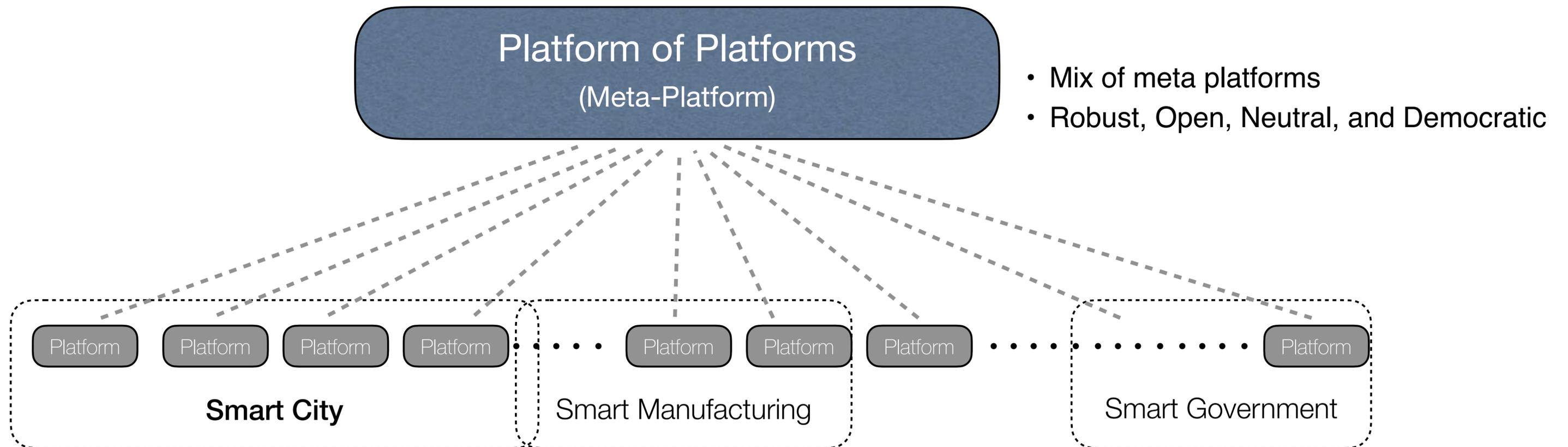


<https://p2.piqsels.com/preview/629/455/739/current-petrol-stations-current-qas-station->



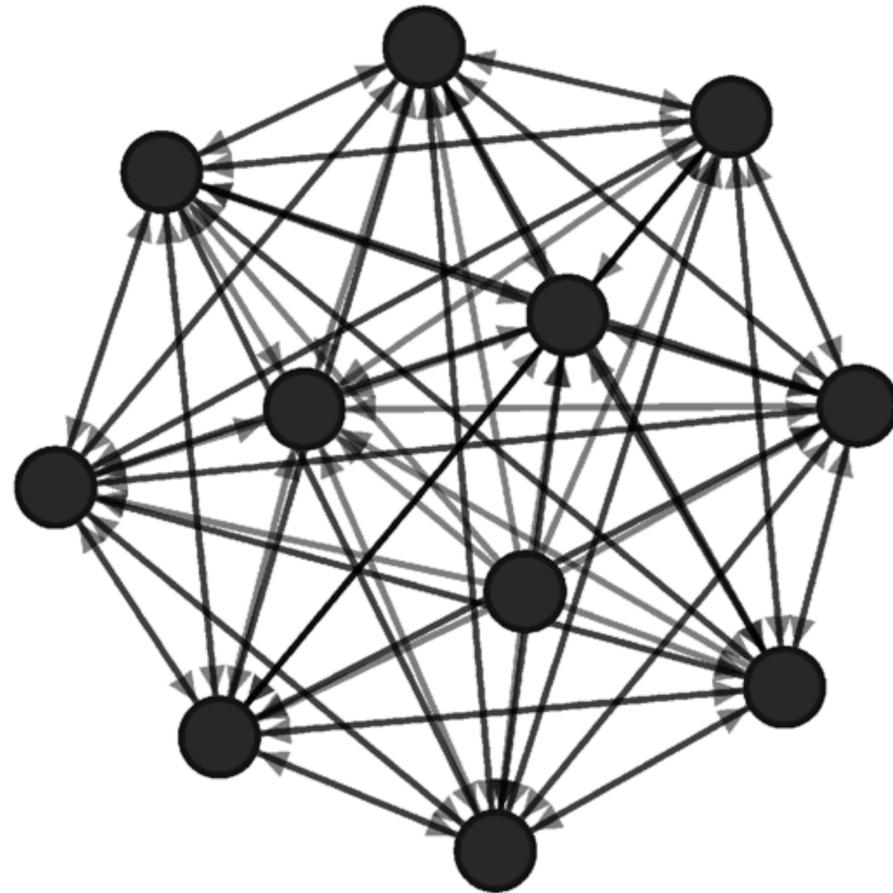
[https://pbs.twimg.com/media/DqXb\\_D6XcAAYBV9.png](https://pbs.twimg.com/media/DqXb_D6XcAAYBV9.png)

One of the Biggest role of the government for AI is to make platforms interoperable and accessible at all levels of society



## Strategy 2: New Data Architecture

Balance between protection and utilization



System-based → Platform-based  
Connectivity

(Standardization of Data)



Rule-based → Algorithm-based  
Customization

(Representation of Data)

## Strategy 3: New CPS (Cyber Physical Society)

New Digital Twin & XR Services

**Real Space**

**Urban Infra**

**Citizen**

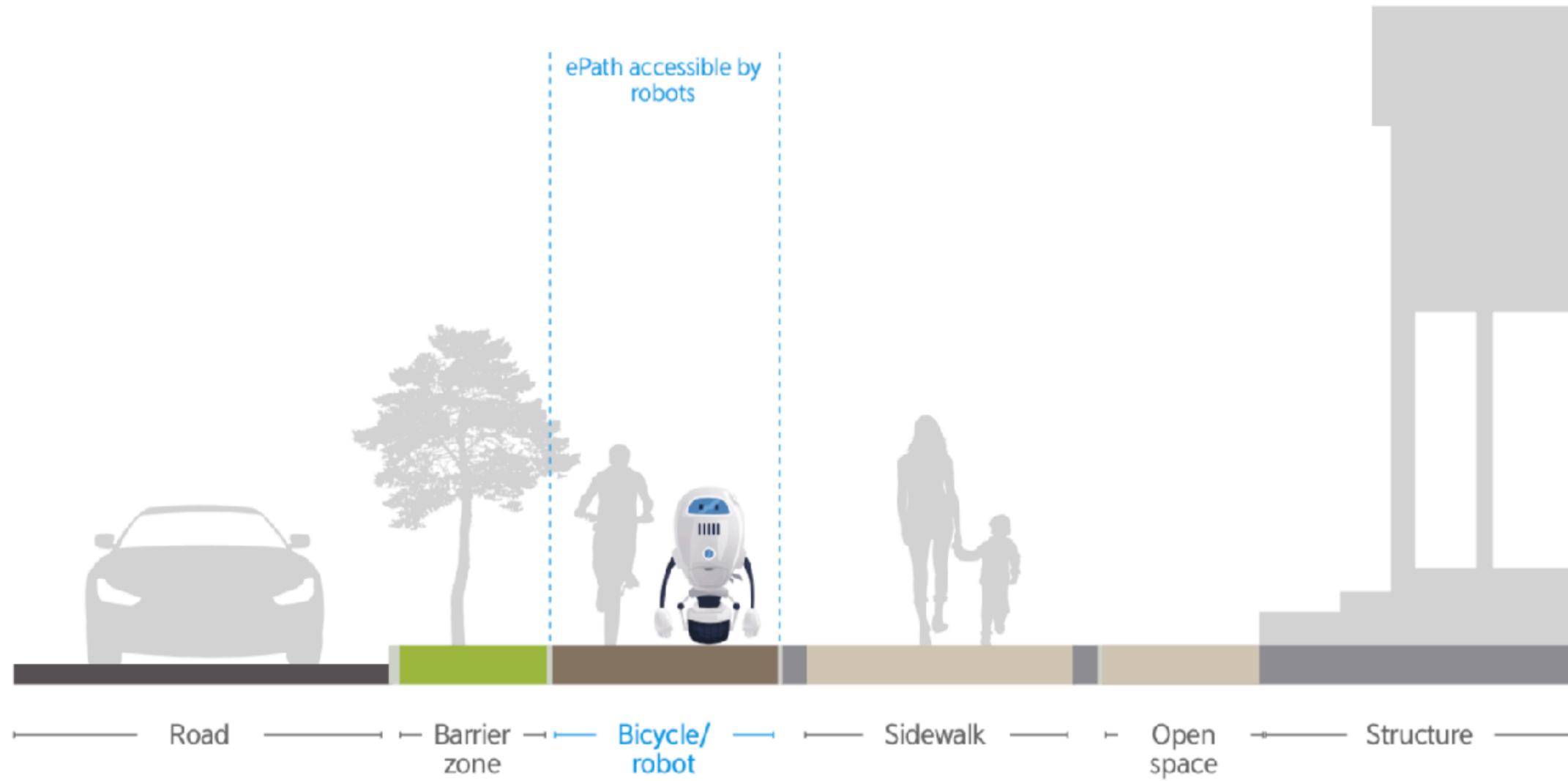
**Cyber Space**

**ICT & Data**

**Public Service**

# Strategy 4: Robot-friendly City

New Urban Infrastructure suitable for the use of Robots



# Conclusion

Conclusion

- The core of the 4th Industrial Revolution is “artificialization” to create most resources artificially
- Even though not a genuine intelligence, AI is making a new paradigm, that is, augmented society where human can be independent from others but more dependent on platforms
- The biggest role of government for AI and social development is to develop and manage platforms most suitable for the development and use of AI
- Smart cities can play a crucial role in the development of AI platforms and augmented society

# Thank you

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