To all the robot companies, Come to Daegu, Reach for the beyond!

National Robot Test Field Innovation Project

As an R&BD hub in Northeast Asia, Daegu Technopolis is a futuristic high-tech science city with companies, research institutes and universities, surrounded by harmonious settlement environments with housing, education and commercial facilities

DAEGU 대구광역시

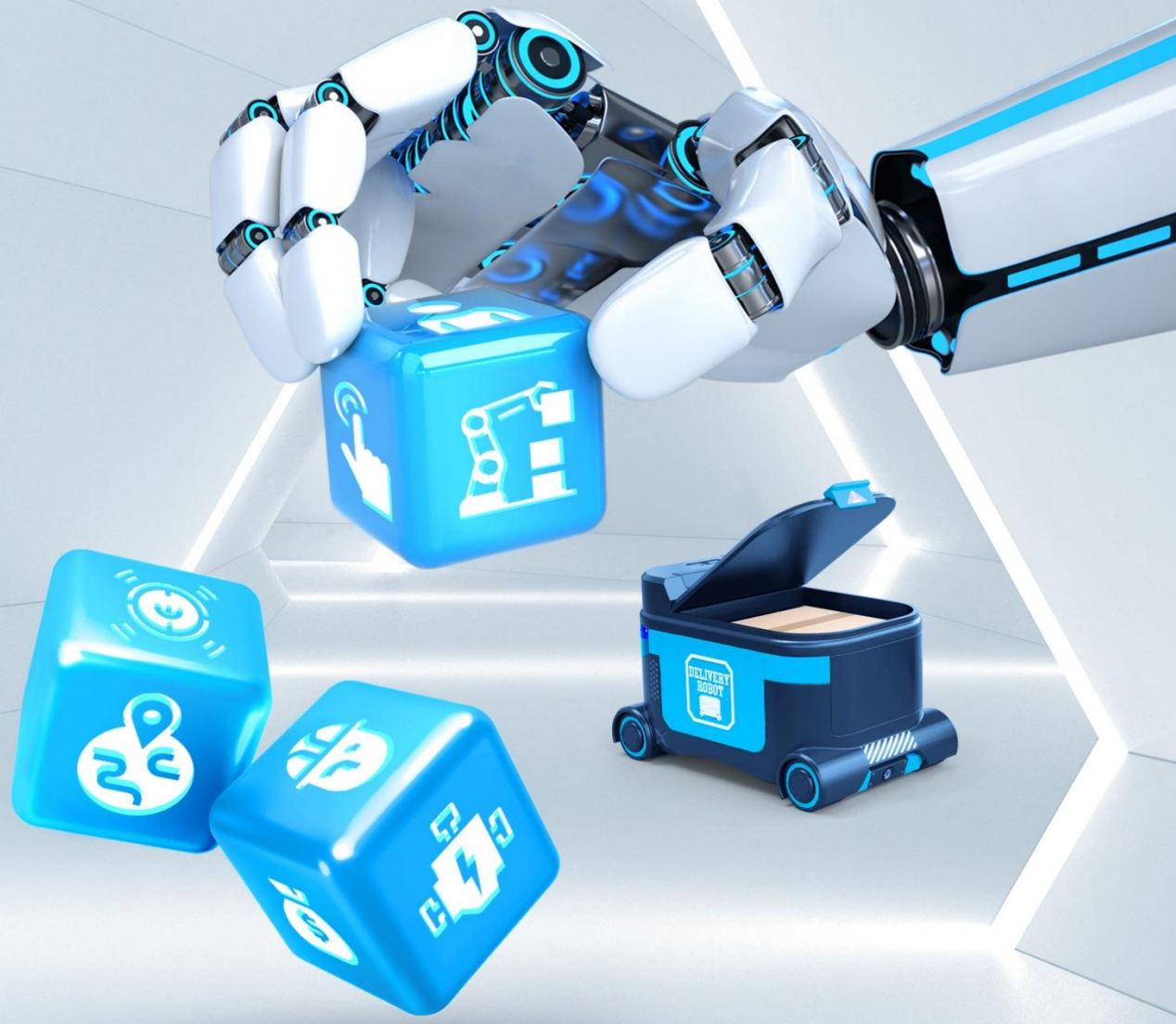
CONTENTS

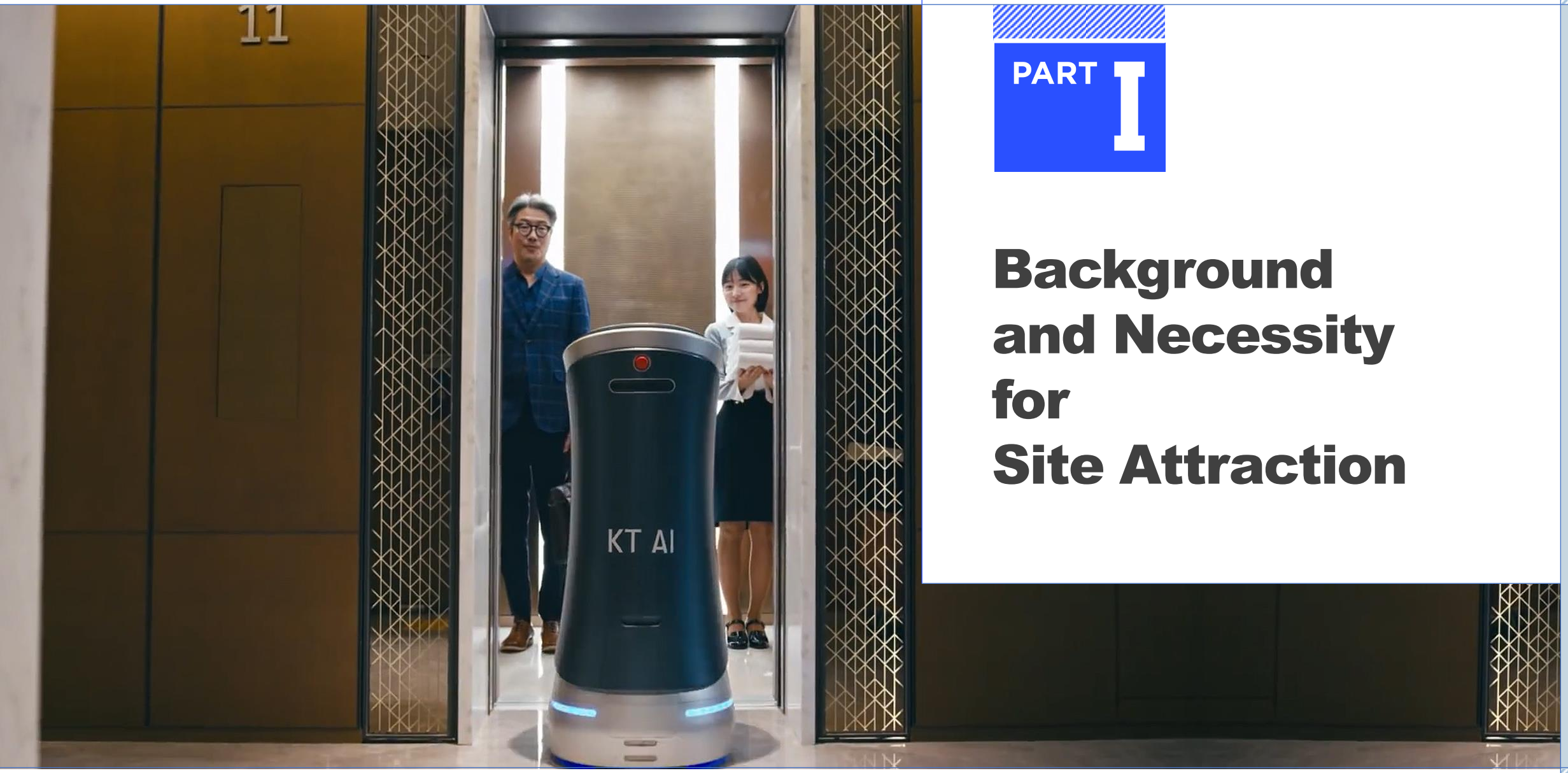
I Background and Necessity for Site Attraction

II Site Status and Development Plan

III Site Terms

IV Local Government Support





PART I

Background and Necessity for Site Attraction

1 Background

Daegu has been focusing on fostering the robot industry intensively for the past 10 years to create visible results.

Infrastructure Construction

- Korea Institute for Robot Industry Advancement (KIRIA) (2010)
- Robot industry cluster (2017)
- Construction of empirical basis of 5G-based high-tech manufacturing robot (2020~2023)
- Mobile Cobot Regulation Free Zone (2020~2024)

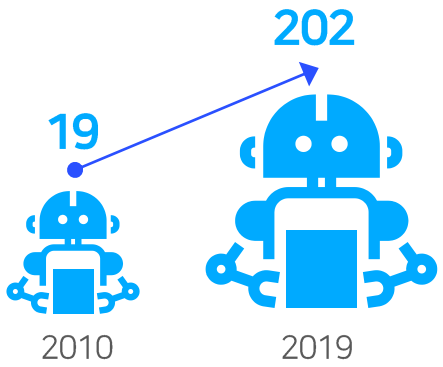
Corporate Support

- Market creation for robot industry and component competitiveness enhancement project (2015~2019, 18.8B KRW)
  - Increase in sales (15.45B KRW), Increase in employment (660 professionals)
  - Increase in Productivity (96.2%), Decrease in defect rate (72.7%)
- Robot industry value chain expansion / coprosperity system construction project (2020~ 2024, 26.7B KRW)

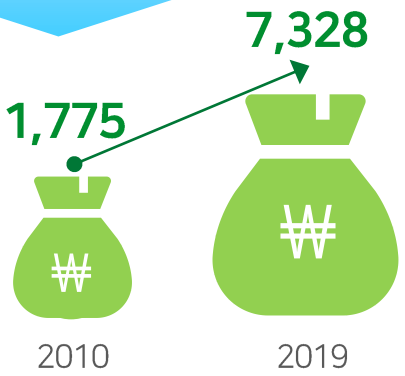
International Cooperation

- Establishment of Global Robot Cluster and its secretariat (2020 – 20 clusters from 17 nations)
- International Robot Olympiad attraction (Dec. 2021, 24 nations)
- Asia's first robotics and system conference (June. 2023, 30 nations)

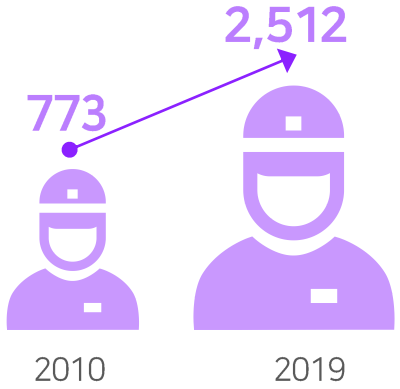
Rank 1 in the Number of Robot companies in Non-Capital Areas



Sales (0.1 Billion KRW)



Number of Professionals



1 Background

Milestone

N – National government
C – City government
P – Private investment

2010.07
Establishment of KIRIA

KIRIA 한국로봇산업진흥원

2014 - 2015
KIRIA building construction (Dec. 2014)
- 35.2B KRW (N 24.8B, C 10.4B)

STÄUBLI 2014
KUKA Oct. 2015
YASKAWA Nov. 2015

2015 - 2019
City's own robot industry market creation / component competitiveness enhancement project promotion(18.8B KRW)

2017.01
First municipal government to establish Machinery & Robotics industry Department

2017.06
Establishment of robot industry cluster
- 141.6 KRW(N 89B, C 36.4B, P 16.2B)
- 3 centers, 83 types of equipment
- 121companies38 companies moved int

2017 - 2018
ABB attraction
Hyundai Robotics attraction

현대로보틱스

2018.11
Establishment of Global Robot Cluster and its secretariat

GRC GLOBAL ROBOT CLUSTER 글로벌로봇클러스터

2019.03
Robot industry development strategy briefing session (VIP)

2020.07
Construction of empirical basis of 5G-based high-tech manufacturing robot

Selected as Mobile Cobot Regulation Free Zone

2020 - 2024
Robot industry value chain expansion / coprosperity system construction project (26.7B KRW)

2021.04
Robot industry supply chain "scale--up" agreement

1 Background

"로봇산업 선도도시 대구의 비전은 머지않아 우리 앞에 현실이 될 것"
"세계가 대구의 로봇산업을 주목, 대구의 꿈을 정부가 적극 지원할 것"

※ VIP 로봇산업 육성전략 보고회 (대구테크노폴리스 현대로보틱스 방문)

Robot industry development strategy briefing session (Mar. 2019)

2021 Ministry of Trade, Industry, and Energy worksplans

Foster Daegu as
the center of Korean robot industry

Daegu's Vision

Daegu, a leading city in robot industry where humans and robots coexist

+

National regulation

Service robot promotion

Actively contributing to service robot industry promotion by providing a building site capable of begin early construction for National Robot Test Field

2 Promotion Necessity : Why Daegu?

National robot industry policy-based integration

R&D, Corporate support	Demonstration Regulation improvement	Test	Commercialization
KIRIA Korea Institute of Robotics & Technology Convergence (KIRO)	Regulation Free Zone 5G-based demonstration	National Robot Test Field	KIRIA, etc.

Well-suited industry ecosystem

Corporate

202 robot corporates including 5 international corporates
(Rank 1 in the Number of Robot companies in Non-Capital Areas)

현대로보틱스 YASKAWA KUKA ABB STÄUBLI

University

46 universities in TK area for R&D and cultivation of professional human resources

DGIST 대구경북과학기술원 경북대학교 영남대학교 Yeungnam University 계명대학교 KEIMYUNG UNIVERSITY POSTECH POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY

2 Promotion Necessity : Why Daegu?

Daegu's strong volition to foster robot industry

Step 1 Robot industry market creation / Component competitiveness enhancement business (2015 ~ 2019, 18.8B KRW)

Step 2 Robot industry value chain expansion / coprosperity system construction project (2020 ~ 2024, 26.7B KRW)

The city of Daegu has been investing **50B KRW** to foster robot industry for the past 10 years

대한민국 내륙 교통의 중심

Daegu - Seoul	2 hrs / KTX	Daegu - Busan	1.5 hrs / KTX
Daegu - Daejeon	1 hr / KTX	Daegu - Gwangju	2 hrs / Vehicle
Daegu - Changwon	1 hr / Vehicle	Daegu - Pohang	1.5 hrs / Vehicle
Daegu - Gumi	40 min / Vehicle		

3 Anticipated Effect

「Daegu, a leading robot industry city」 where robots and humans coexist

Aimed at attracting 662 robot-related companies, employing 11,799 professionals, and increasing sales to 41T KRW.

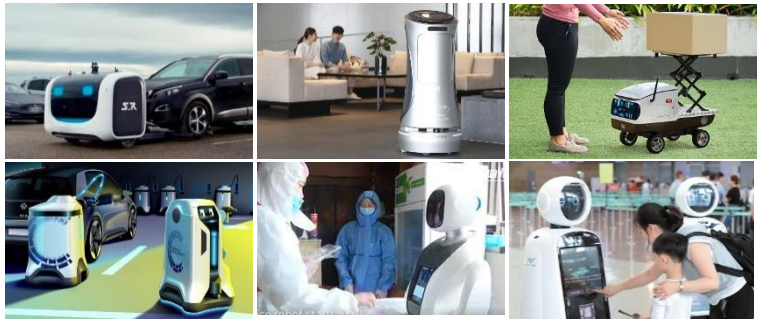
Balanced Regional Development

Create a robot-integration complex With Robot Test Field and Hyundai Robotics at the center

- 1 hour living distance of Yeongnam area
- 13M population in Yeongnam area

Industry Innovation

- Provide an opportunity for traditional industries' (Automotive components, metal & machinery) transitions to robot industry
- Excavate potential services from future new growth industries like Medical, future automotive, smart city



A hub city of future industry

- Daegu driving test site
- Demonstration roads for autonomous vehicles
- Korea Water Cluster
- Decentralized energy testbeds

▼

New municipal government building
: tech-convergence building
Special zone for urban convergence
: data platform

▼

Provide opportunities to discover new businesses

Creating Korean robot convergence cluster

Utilizing anchor robot companies

Attracting component suppliers and buyers with currently attracted corporates as a center (e.g. Hyundai Robotics, Yaskawa Electronics).

- Supporting industrial robot manufacturers to manufacture service robots
- Anchor robot companies' business diversification: robot rental business
- Supporting attraction and development of robot utilization service companies (e.g. service centers, replacement centers, etc.)

Creating Korean robot convergence cluster

Demand location expansion

Entertainment

- (Daegu) E-World
- (Incheon) Robotland
- (Changwon) Robotland

⇒ Ridable robot, AR·VR robot

Medical

- Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)
- Daegu Medi-city council
- University hosipal

⇒ Medicine delivery·rehab robot

Logistics

- Coupang (Daegu High Tech Logistics Center)
- Regulation Free Zone
- Special Zone for City Convergence

⇒ Logistics·delivery robot

Public

- City hall, county's civil service center
- Exco
- East Daegu Station

⇒ Guide·disinfection robot

Attracting Domestic / International promising companies

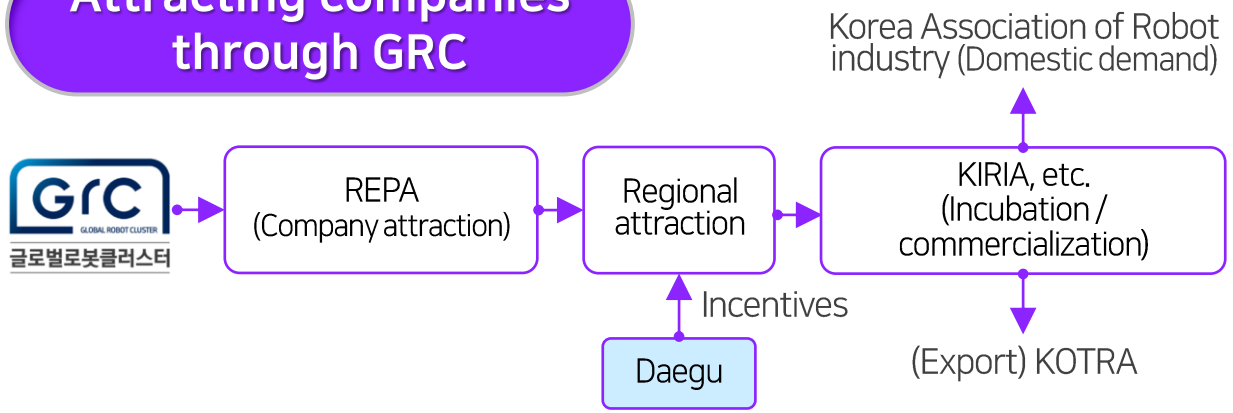
Fostering service robot start-ups

- **Idea excavation**

1. Excavating service model by utilizing service robot's empirical data
2. Opening purpose-oriented contest (last-mile logistics robots, etc.)

- **Fostering robot star companies** through Daegu's business growth ladder project

Attracting companies through GRC



Case study: company A

- American service robot company
- Main product: Serving robot
- Entered Korean market through Global Robot Cluster

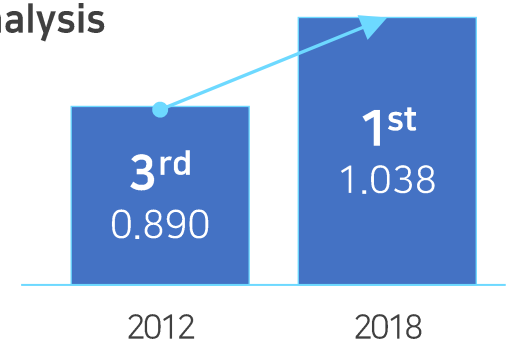
First mover in service robot industry

Daegu advocates itself as 'robot industry mechanical city' through the business strategy in
' **The 4th 5-Year Balanced National Development Plan** (2018~2022) '

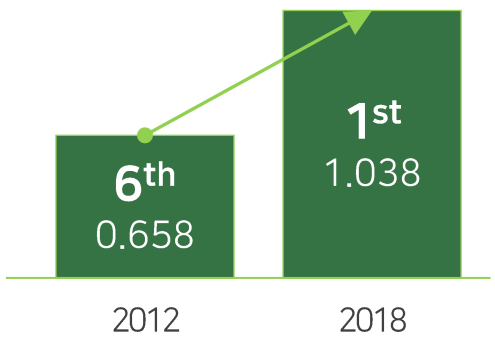
Daegu aims at rising as a core city for securing national robot competitiveness through its high skill standard in innovation potential and comparative advantages in productivity increase.

Technology status

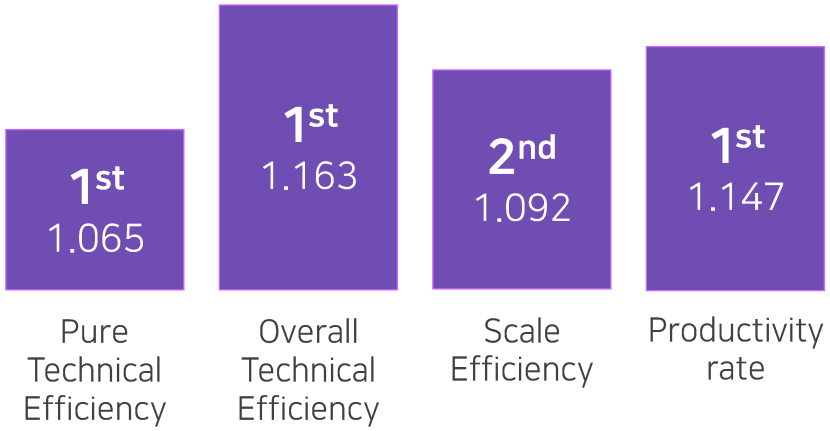
Innovation potential analysis result (Ranks in nation)



Comparative advantage (productivity)



Competitiveness (changes in productivity)



6 Possibilities to contribute to balanced national development :

Synergy among regulations → Systematic performance proliferation →
Presentation of Successful models in business transition → Overseas expansion

1 Synergy among regulations

Increase in effectiveness of robot industry foster policy through integration of regulation institution

2 Systematic performance proliferation

Test Field demonstration → Real environment demonstration in Daegu → National expansion

Demonstration of the new building of Daegu municipal government, and special zone for city convergence
(robot service model discovery)

Daegu smart city demonstration
(Securing credibility in robot service)

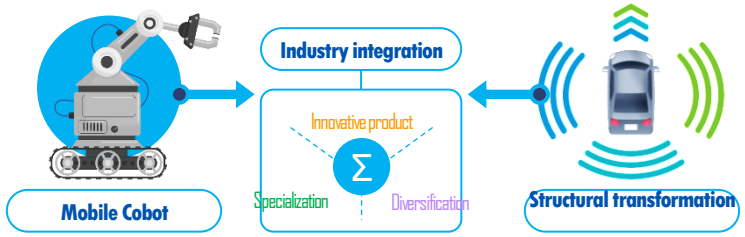
Robot service platformization
(Nationwide expansion of smart city)

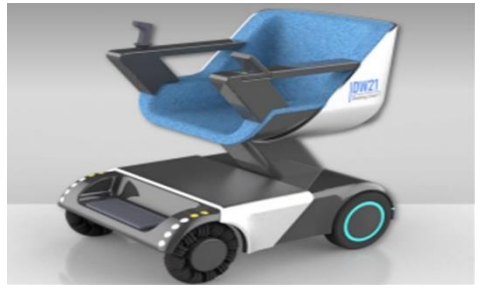
Possibilities to contribute to balanced national development :

Synergy among regulations → Systematic performance proliferation →
Presentation of Successful models in business transition → Overseas expansion

3 Presentation of Successful models in business transition

- Providing opportunities of business transitions for downstream industries (Machinery & Metals, automovtive components, etc.)
  (e.g.) Daedong mobility – In progress of agricultural / non-agricultural AI robot development





4 Overseas expansion

- Overseas expansion through Global Robot Cluster (Secretariat in Daegu) providing opportunities for linked cooperation

국가로봇테스트필드_대구 조감도

Thank you