

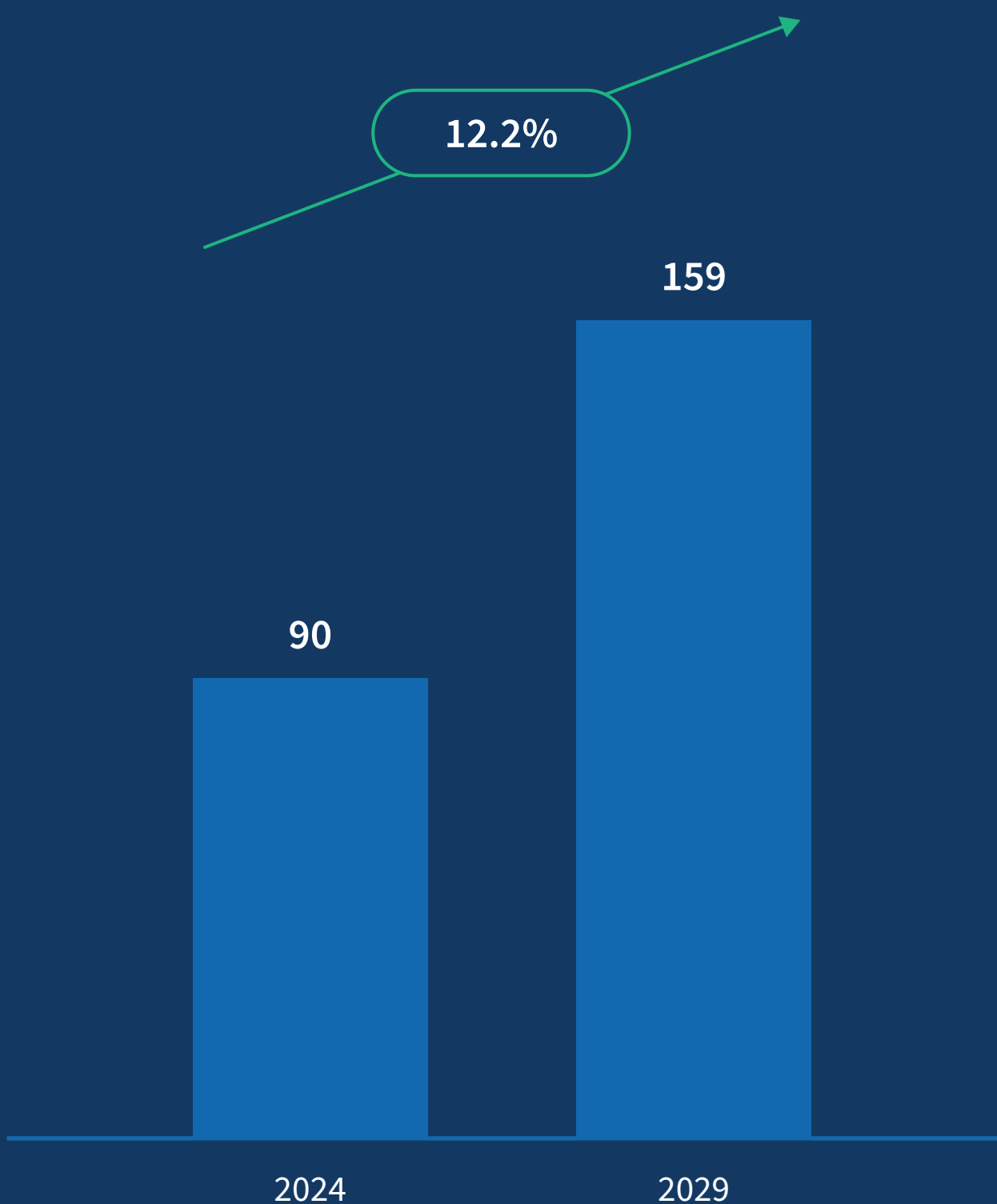


# Harnessing the Robotics Revolution

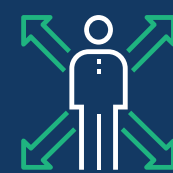
## Nine Insights for Industry Leaders

# The global Robotics market will double by 2029 to reach USD \$159 billion; innovators are leading smart developments that drive growth and efficiency

**Global Robotics Market**  
(USD bn)



## ACT NOW TO LEAD



Capitalize on expected growth to outpace competitors

## BUILD SMARTER SOLUTIONS



Align your strategy to thrive in the robotics landscape

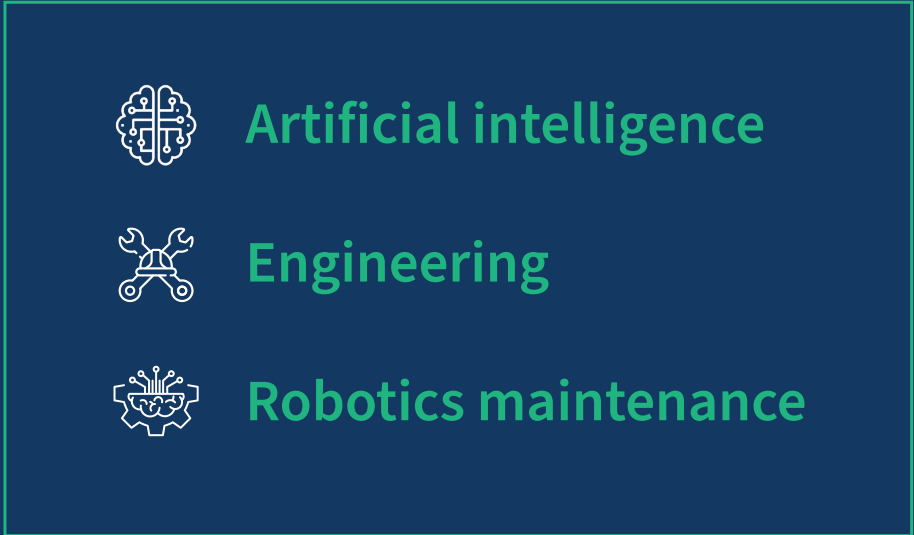
## FUEL EFFICIENCY & INNOVATION



Use robotics as a catalyst to transform operations and achieve sustainable impact

Far from eliminating jobs, robotics automation will structurally reshape industries and skillsets while creating new opportunities from a job creation angle

JOB'S CREATED  
**97 million jobs**

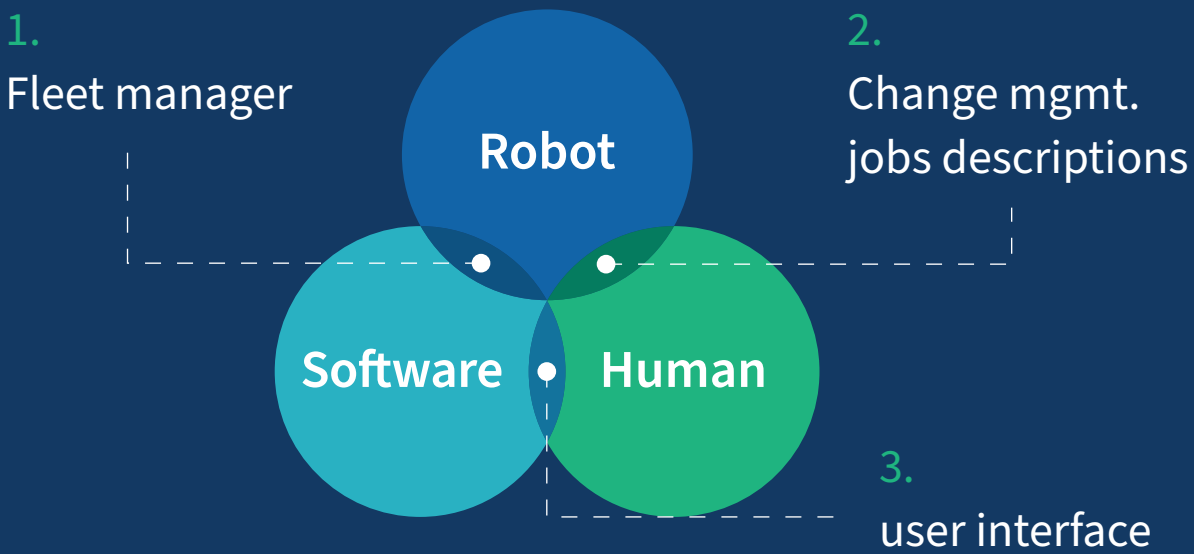


JOB'S AT RISK  
**75 million jobs**



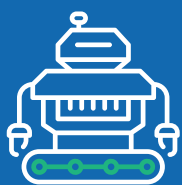
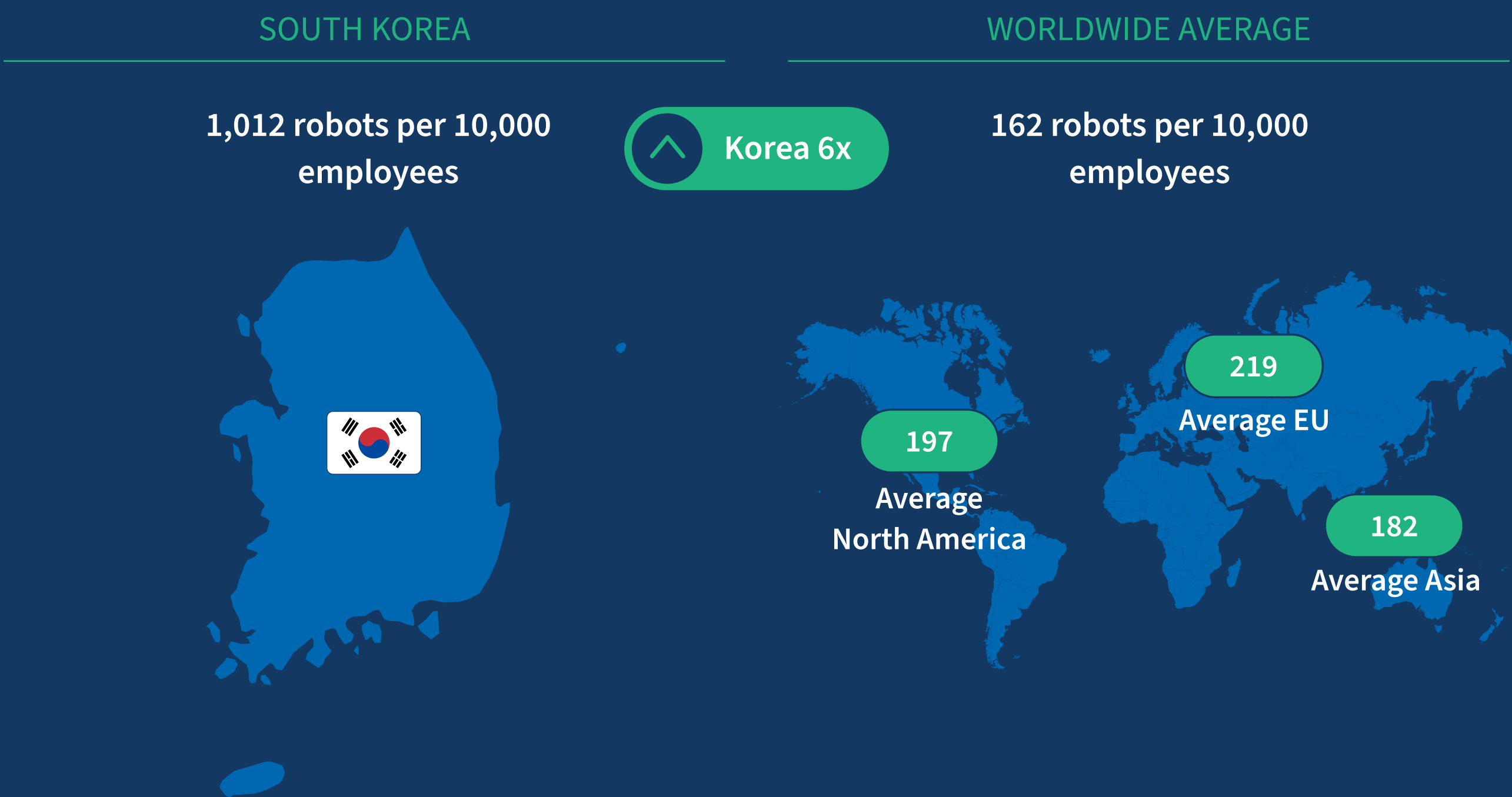
Automation isn't eliminating jobs; it's creating them. With **97 million** new roles expected worldwide, you should position your development at the forefront of technological advancement

Intersection of Robots, Humans and Software





# South Korea leads in automation with a robotics penetration six times larger than the world average, highlighting massive growth potential

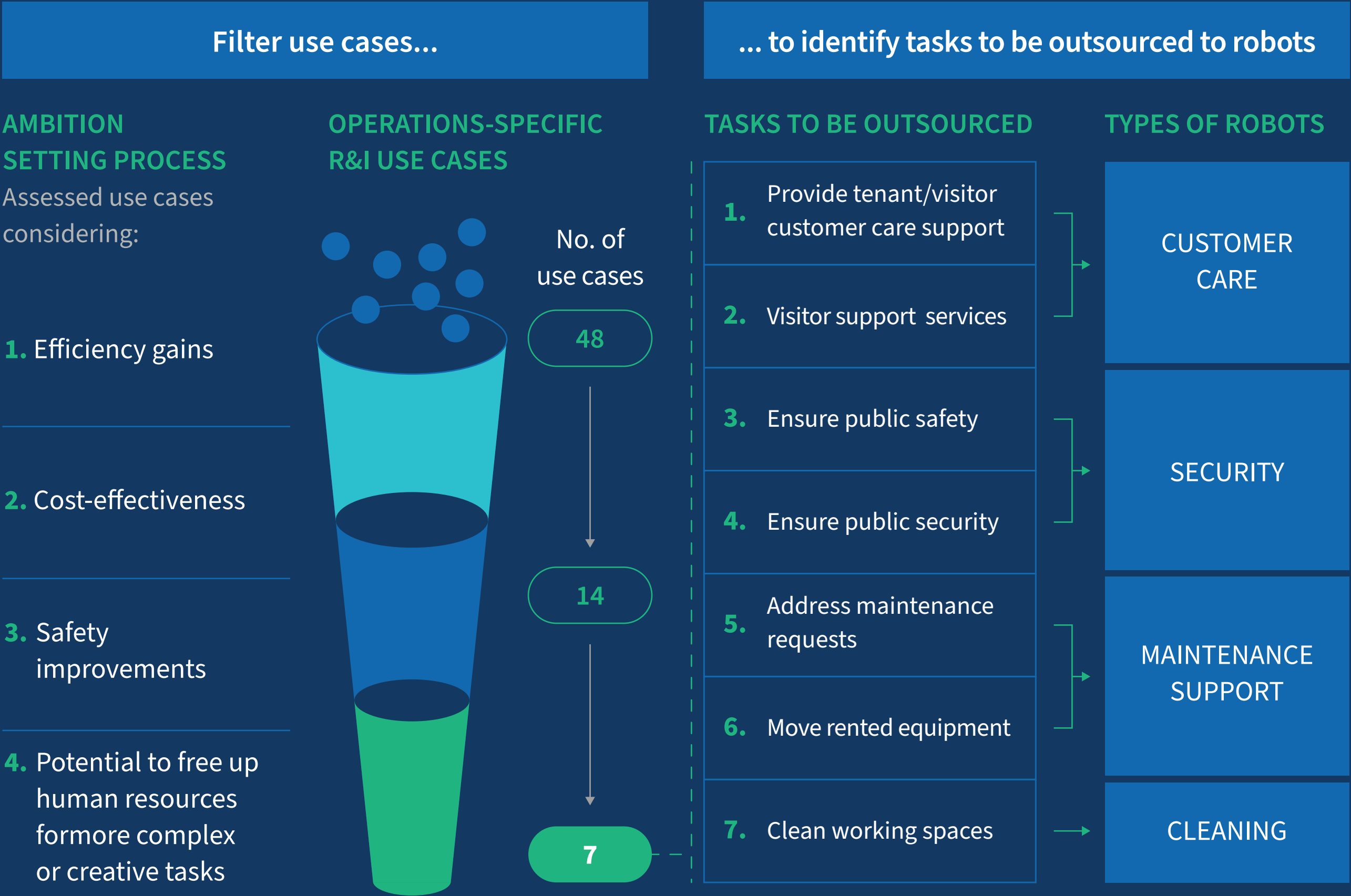


Robot density has doubled in the past seven years. Even so, South Korea is significantly above the market, followed by Singapore and China with 770 and 470 robots per 10,000 FTEs<sup>1</sup> respectively.

Notes: (1) FTE: Full Time Equivalent .  
Sources: International Federation of Robotics (IFR), SRT Labs, FTI Delta research and analysis.

# Robotics automation is not about replacing people, it is about leaving repetitive tasks to robots so people can focus on strategic priorities and innovation

## ROBOTIC AMBITION SETTING



From security and maintenance to customer care, robots are equipped with skills to handle a variety of tasks and support smart development operations

Illustrative

	CUSTOMER CARE	SECURITY	MAINTENANCE	CLEANING	CLEANING	CLEANING
DESCRIPTION	<b>LG Cloi Guidebot</b>  Information and tour guide services robot  Uses sensors and camera to navigate	<b>SMP Argus</b>  Autonomous security robot  Video system with thermal and visible radiation sensors	<b>TUGBOT Tugbot 2</b>  Connects to a variety of carts and facilities  Tows a payload up to 600kg	<b>LIONSBOT R3 VAC</b>  Cleans 0cm to edges  Automatically returns to charge	<b>NEXARO NR 1500</b>  Cleans corners and under furniture  Designed for professional spaces	<b>LIONSBOT R3 Scrub Pro</b>  Brush options for many floor types  Automatically returns to charge and drains / refills water
	<div>9hs</div> <div>5hs</div>	<div>10hs-12hs</div> <div>4hs-6hs</div>	<div>8hs</div> <div>25 mins</div>	<div>2hs-3hs</div> <div>2hs</div>	<div>2.5hs-3.5hs</div> <div>2hs</div>	<div>3hs</div> <div>95-125 mins</div>

# More sophisticated robots are becoming operational through experimentation and AI integration, performing complex operations with significant autonomy

Illustrative

	SOCIAL HEALTHCARE ROBOTS	MULTIPURPOSE UGV <sup>1</sup>	QUADRUPED ROBOTS
DESCRIPTION	<div><div><b>Navel Robotics</b> Navel</div><div>Social healthcare companion for elderly patients</div><div>Assists individuals with cognitive and emotional care needs</div></div>	<div><div><b>Bold Robotics</b> Shadow</div><div>Fully electric, remotely or autonomously operated UGV</div><div>Capable of performing light tasks on rugged terrain</div></div>	<div><div><b>ANY botics</b> Anymal X</div><div>Rugged, impact-protected robot for demanding environments</div><div>Intended to inspect oil &amp; gas and chemical operations</div></div>
KEY FEATURE	<div><b>Enhanced human interaction:</b> Engages with users emotionally &amp; conversationally</div>	<div><b>Advanced mobility:</b> Can operate autonomously in rough terrain</div>	<div><b>Four-legged movement:</b> Capable of maneuvering in multi-floor facilities</div>
AI/ML CAPABILITY	<div><ul style="list-style-type: none"><li>— Natural language processing</li><li>— Non-verbal communication including expressions and eyesight tracking</li></ul></div>	<div><ul style="list-style-type: none"><li>— Fully autonomous operation even on hazardous terrain</li></ul></div>	<div><ul style="list-style-type: none"><li>— AI-driven quadrupedal movement and automated data gathering</li></ul></div>

Notes: <sup>1</sup>Unmanned ground vehicles.  
Source: SRT Labs, FTI Delta research and analysis

# NaverLabs '1784' integrates robotics, digital twins and AI-driven infrastructure to set a new standard for smart developments and robotics as mainstream

## MAIN FEATURES

Essential Foundations for Smart Space

### **The entire space as a digital twin**

Digital twin automation using robots and AI AI-based three-dimensional localization

World's First Robot-Friendly Building

### **Robot-friendly building design**

Integration between robots, BMS, IoT and applications Optimization of movement via robot-only elevator, e.g.

Integrated Solutions for Future Buildings

### **In-house solutions**

In-house development of equipment and technologies From cloud/5G infrastructure to all-in-one applications



## HOW IT WORKS



### **Digital twin**

Data



### **ARC - Brain**

Multi-Robot Intelligence System



### **Robot, AR, etc.**

Service



# Successful robotics integration requires both physical and digital infrastructure, robot-friendly spaces and centralized data ecosystems

## Physical requirements

Robot-friendly urban spaces



## Digital Requirements

Robotics as part of the tech stack integration

### FLEET MANAGEMENT PROVIDERS

Fleet management providers have specialized within the robotics landscape to differentiate their solutions between device complexity and level of control

In sophisticated applications, fleet management as an stand-alone software will not be sufficient; integration with the orchestration and data layers of the smart city or development is key to generate maximum impact

Integrate robot-specific features like dedicated elevators and charging stations into your city's design to enhance efficiency and reduce long-term costs

Adopt a centralized data ecosystem to efficiently manage your robotic fleet in coordination with the entire tech stack

# The operational impact is clear and results are measurable: Robotics reduce injuries by 70%, improve efficiency by 50% and cut delivery times by 30%

## 4.1 DOUBLE YOUR CITY'S EFFICIENCY

Implement robots to reduce  
cycle times by up to  
**50%**

## 4.6 ENHANCE WORKFORCE SAFETY

Robotics can reduce  
workplace injuries by  
**70%**

## 4.5 ADVANCE SUSTAINABILITY

Collaborative robots reduce  
energy consumption by  
**18%**



## 4.2 SPEED UP SERVICE DELIVERY

Robotic automation can cut  
delivery times by  
**30%**

## 4.3 ELEVATE QUALITY STANDARDS

Achieve unparalleled  
precision: robots can lower  
defect rates by up to  
**75%**

## 4.4 MAXIMIZE UPTIME

Maintain seamless city operations with  
robots that offer up to **90%-98%**  
uptime

# FTI Delta and SRT Labs are trusted advisors in robotics, combining strategic thinking with hands-on implementation expertise



1

## DEFINITION OF ROBOTICS AMBITION



Define the ambition and level of sophistication



Analysis of use cases of the smart development



Assessment of which use cases can be outsourced to robots

2

## ROBOT CATALOGUE



Robot selection (brand/models)



Robot quantity



Robot budget

3

## IMPLICATIONS



Engineering design adaptations for robots



Robot-friendly building design



Robotic data ecosystem design

**Design implementation plan for robotic use across the smart development**



# Reach out to our experts to learn more about how FTI Delta and SRT Labs can help

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*The views expressed herein are those of the author(s) and not necessarily the views of FTI Consulting, its management, its subsidiaries, its affiliates, or its other professionals.*

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