Investor Relations 2025

Doosan Robotics

Innovation in every motion,
revolutionizing the way we work



DOOSAN

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Chapter 01

Who we are

01. Main business areas
02. Structural change in labor market
03. Cobot optimized for targeting potential market
04. Most rapidly growing robotics company

Main business areas

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Expansion into solution packaged products and SW platform backed by best-in-class quality of Cobot

DR's business areas

Main Business Area
Cobot



Series E — Higher accessibility to the F&B market with lower price



Series A — A low payload[1] model of 5~9kg without torque sensor



Series M — A premium model capable of precise work based on torque sensors



Series H, P — A high payload model of 20~25kg, 30kg

Key Strategic Focus
Solution



Coffee Module — Unmanned café solution



Palletizing Solution



Frying solution



Ice-cream robot



Welding solution

Future Growth Driver
Software



Dart IDE — Tool kit for developing robot apps

Dart Platform — Primary platform where apps are downloaded and run

Dart Store — A store offering a variety of robot apps

(1) Payload: The maximum weight that robot can lift and carry

Structural change in labor market

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Working-age population is expected to decline rapidly mainly in developed countries while the avoidance of labor intensifies due to changed paradigm

Intensifying labor shortage

Falling labor force population



Drop in working-age population due to the aging and shrinking birth rate

Reduction in labor elasticity



Post COVID-19, needs for stable labor force has increased

High labor cost



Mounting burden of labor cost as average income level grows

Desire for high quality of life



Dangerous

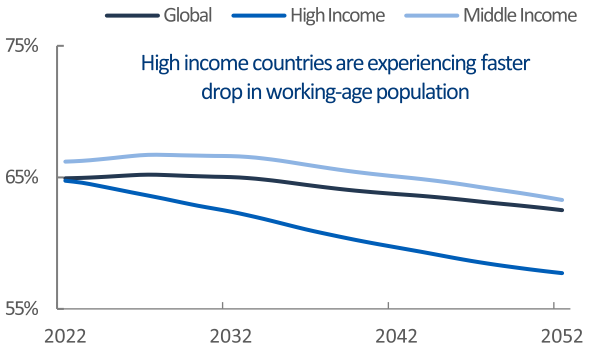
Difficult

Dirty

Repetitive

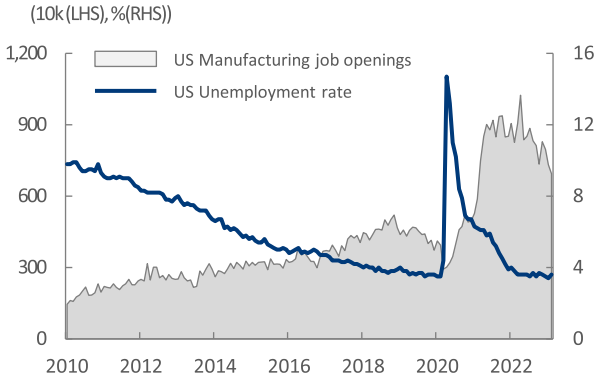
Increasing aversion to 3D / repetitive labor

Global working-age population forecast(1) (age between 15 ~ 64)



Source: World Population Prospects 2022 (UN),
(1) Breakdown by income level, based on World Bank classification

U.S. Manufacturing job openings and unemployment rate trend

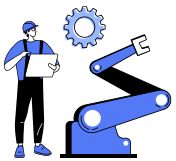
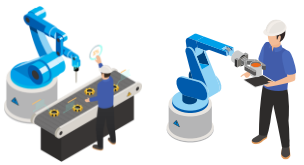
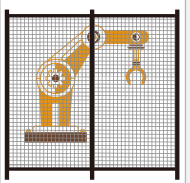


Source: U.S. Bureau of labor statistics

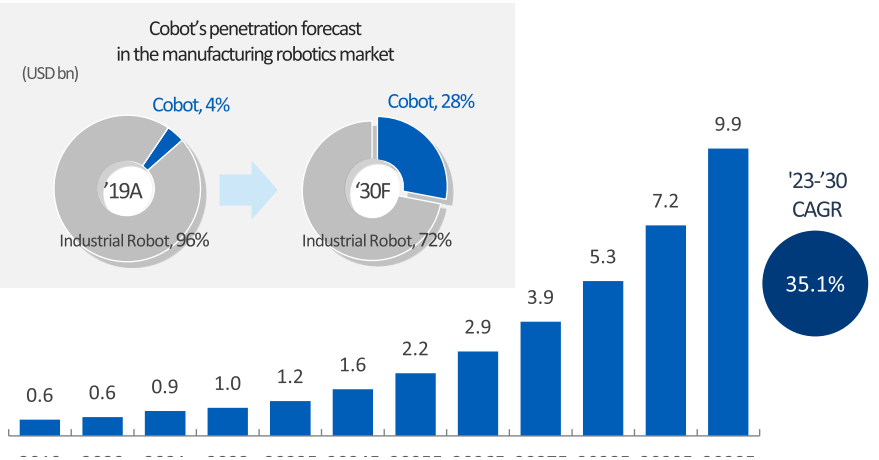
Cobot optimized for targeting potential market

Robust growth of cobot market is expected with a replacement of human labor and Cobot is expected to vastly penetrate to wider markets including professional and personal service market

Why Cobot?

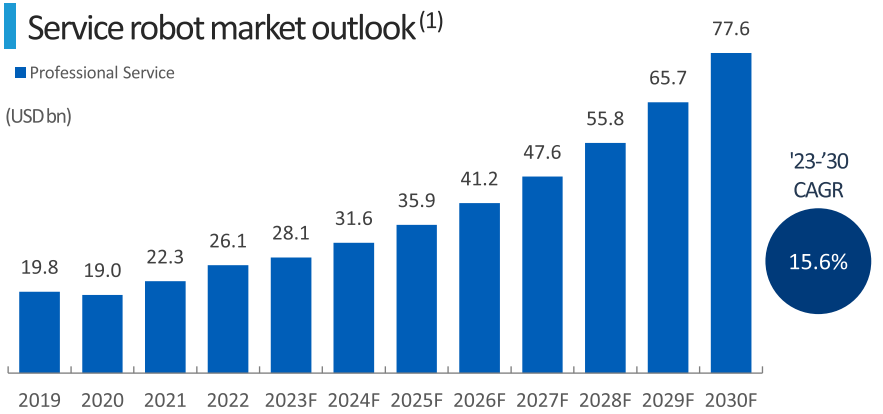
	Feature	Industrial	Professional Service	Personal Service
Cobots 	Safety Light weight Easy control	 Interaction with human / Low initial cost	High Expandability  Combination with mobility and vision / Diverse applications	
Industrial Robots 	High Danger Fence needed Heavy weight		Low expandability due to inability to interact with human	

Cobot market outlook



Source: Markets&Markets

Service robot market outlook (1)



Source: Markets&Markets

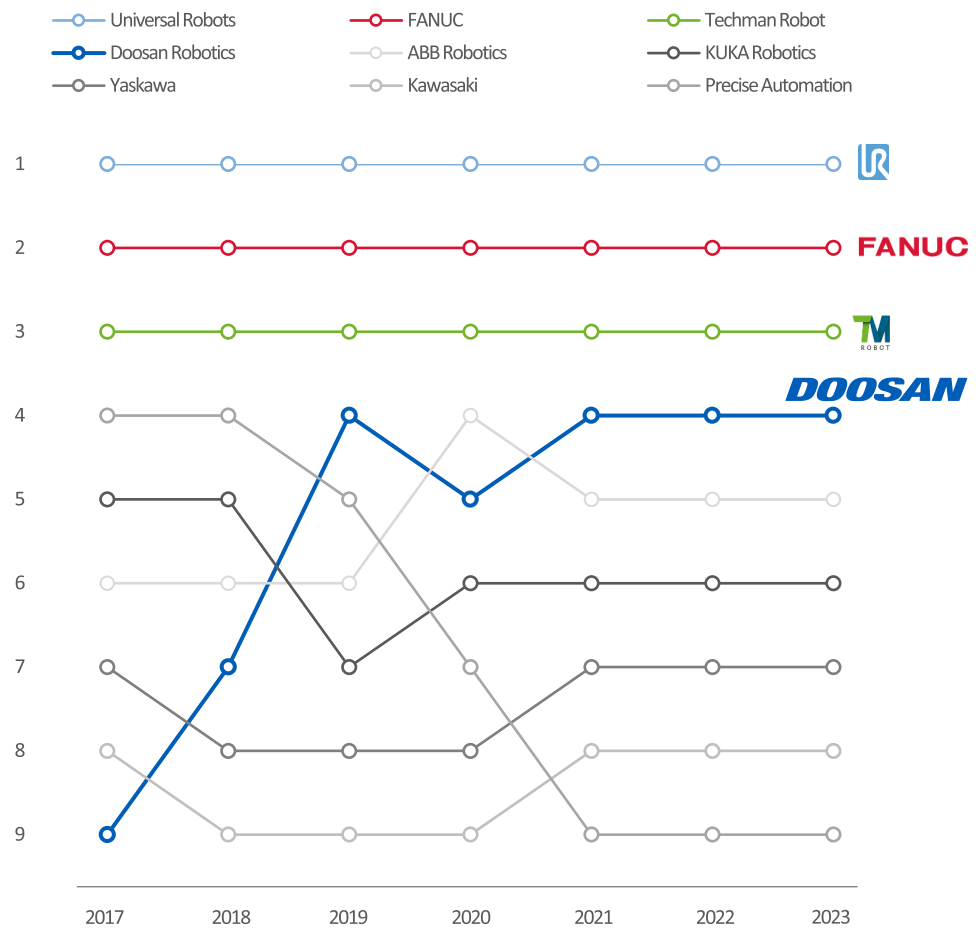
(1) Professional service robots are robots used for commercial purposes, and do not include personnel robots (i.e. robot vacuum cleaners, drones, etc.) used by individuals for non-commercial purposes.

Most rapidly growing global leading robotics company

DOOSAN

Fastest growth among the global leading robotics peers since its product launch in 2018

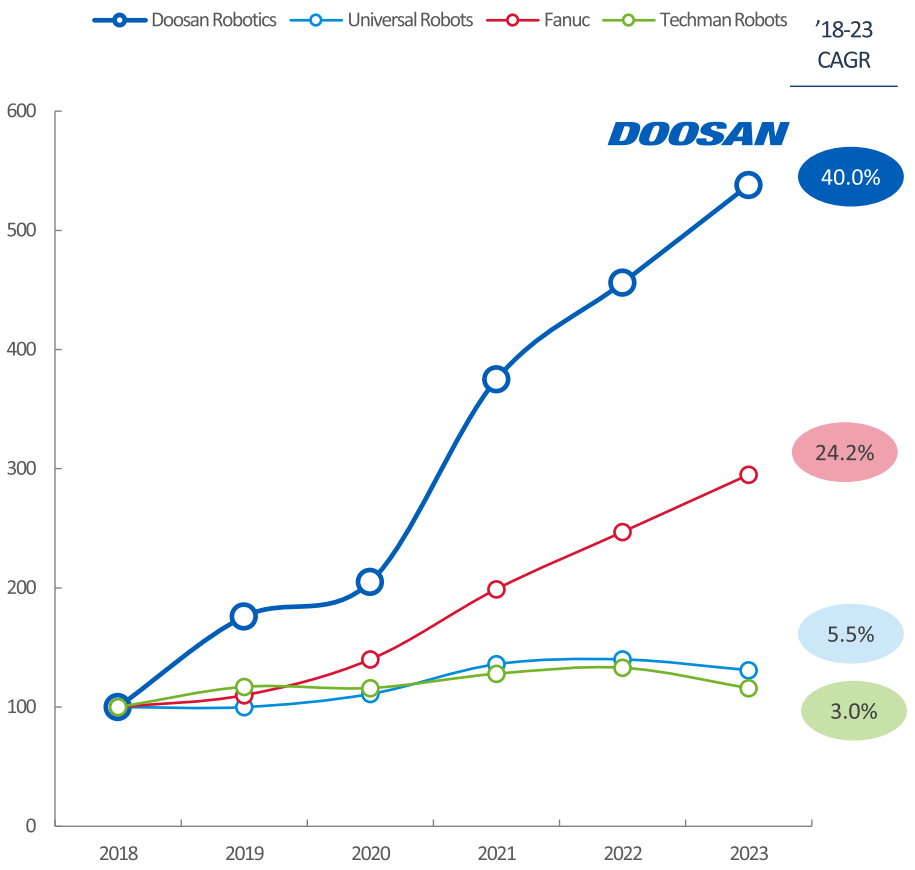
Cobot market share ranking (excl. China market)



Source: Company data, Markets & Markets

Major cobot makers' revenue growth trends

(2018 Revenue =100)



Source: Company data, Markets & Markets



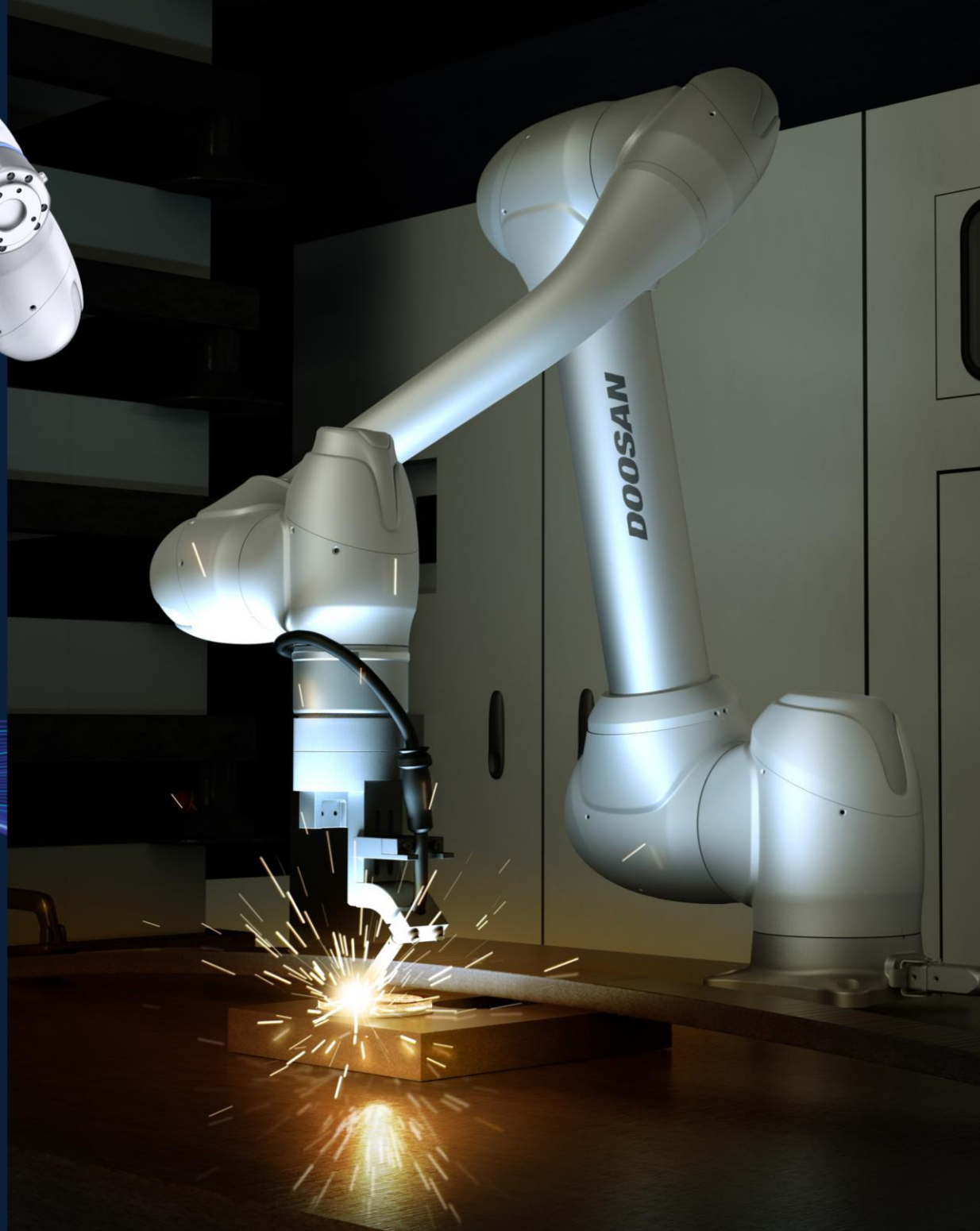
Chapter 02

What Makes us Special?

01. Leading Technology

02. Global Presence

03. New Application



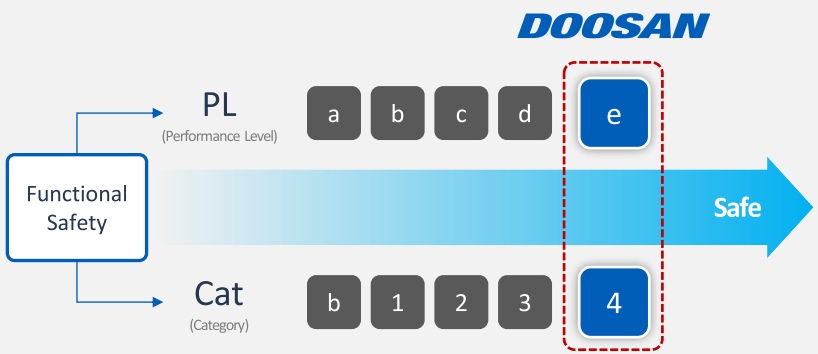
DR is the leader of safety qualification

DR is certified with the highest safety rating among leading global cobot manufacturers

Best-class safety certificates

PL e, Cat 4 Certification

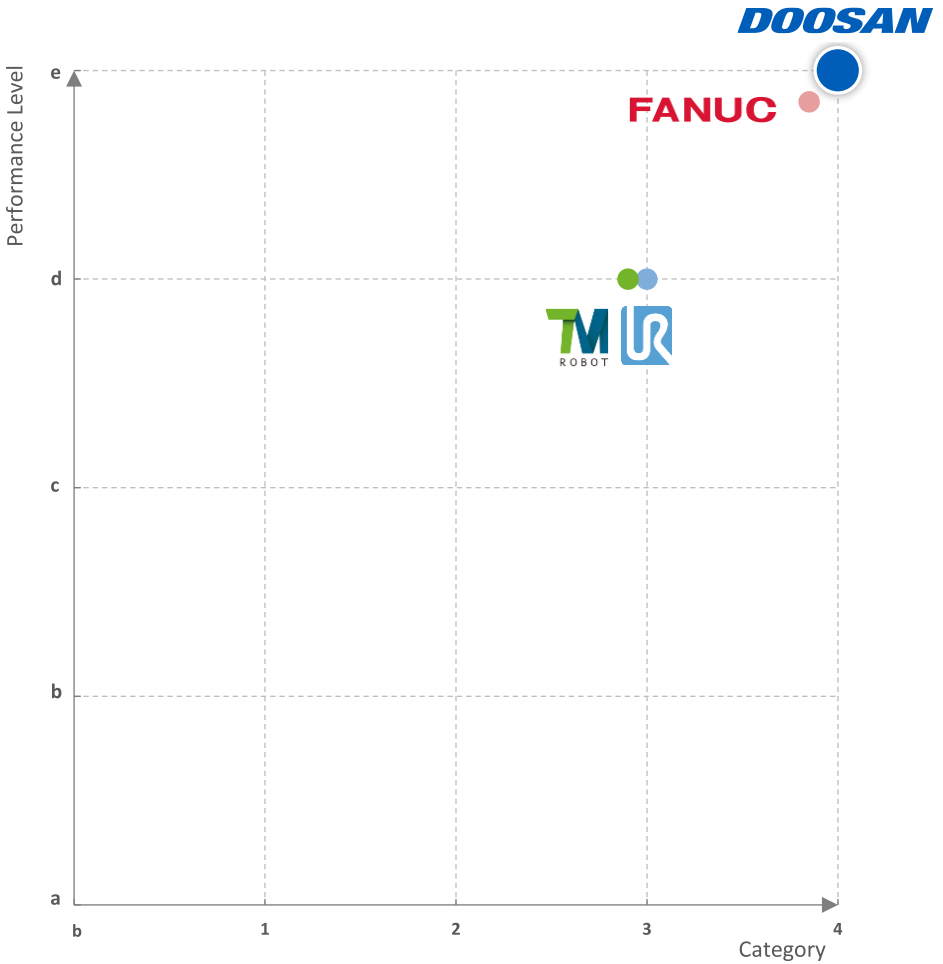
ISO certification overview



Collaborative robots must be certified with ISO safety levels as they work with humans

Source: Company data

Major cobot makers' certification status(1)



Source: Company data
(1) Based on highest safety rating

DR is specialized in offering products with a high degree of precision

DOOSAN

Best-in-class precision capability with top-notch software and control technology backed by 6 torque sensors(1)

Adoption of torque sensors



6 Torque Sensors

Differences in operation

	Torque sensors	Current control
Mechanism	Directly measure the torque generated from robotics motion	Indirectly measure torque with the current value input to a motor
Operating Feature	Measure the direction of an object to enable robots to perform diverse motions	Cannot measure the direction of an object, instead perform only predetermined motions
Pros	• Capable of doing unstructured motions such as fitting an object into a specified form • Precise force control for delicate and safe motion	Affordable Price

Torque sensor's control methods



Force Control

Generates motion until the set force and reaction force are in equilibrium



Compliance Control

Reaches equilibrium at a target point, generating reaction force when displacement occurs at the equilibrium point



Source: Company data
(1) Limited to a few models

Diverse product portfolio

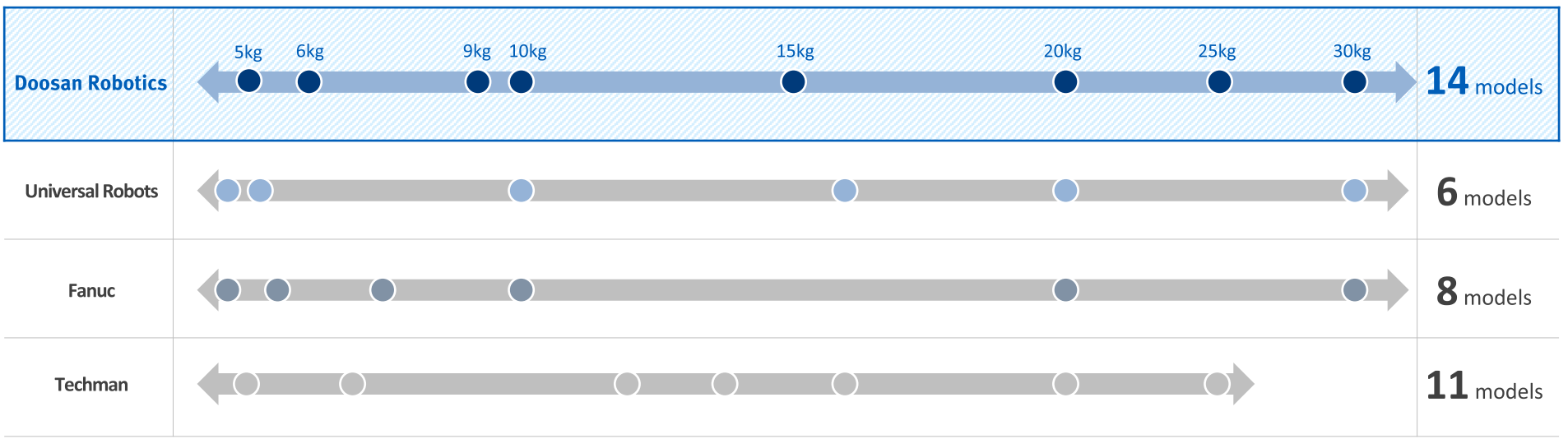
DOOSAN

DR has the largest product portfolio with various payloads and work ranges

Pioneering the new markets with high payload and wide work range and strong dominance in 20kg+ Payload Cobot market

Product portfolio of major cobot makers(1)





Source: Markets&Markets

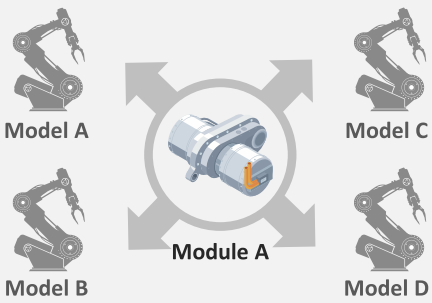
(1) Based on Markets&Markets research data excluding models that weights more than 100kg

Establishment of a mass production system

DOOSAN

Unified Joint module manufacturing offers enhanced cost structure and an opportunity to expand capacity without large-scale CAPEX

Modularized production system



Unified joint module for all models & axis

14 Models × 6 Axis = 84 Joints

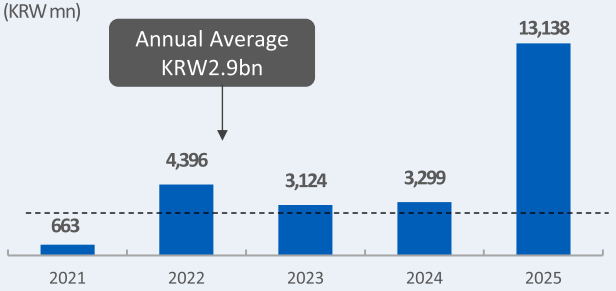
14 Joints

Capable of producing entire models

Simplified manufacturing process Ready for mass production without large-scale CAPEX through production of unified joint module

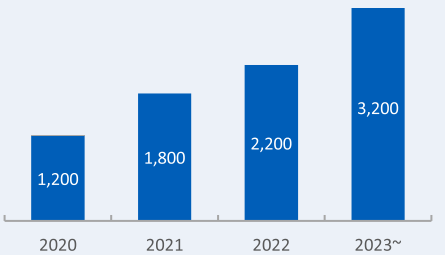
CAPEX trend (excl. intangible asset)

(KRW mn)



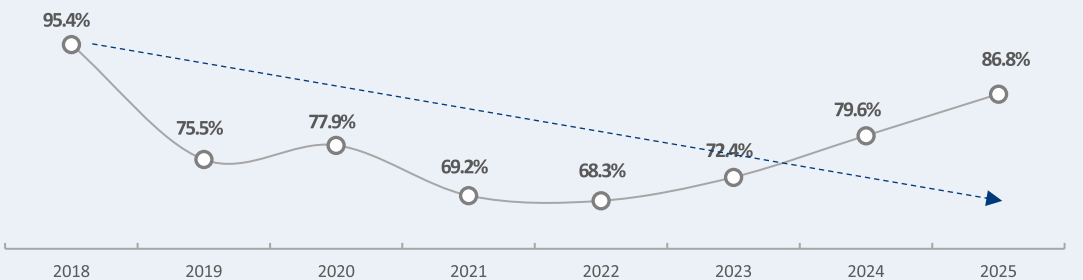
Annual capacity

(Unit)



Enhanced raw material composition Secured economies of scale and unit-cost reduction via streamlining raw materials and unified joint module design

CoGs % to sales

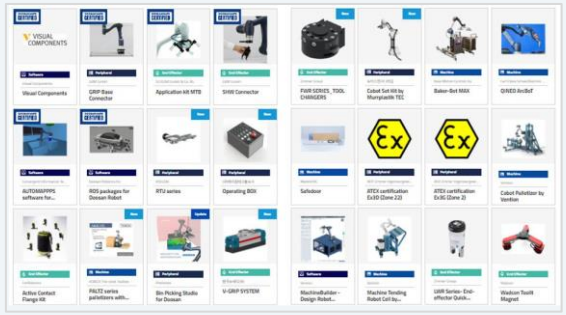


Source: Company data

Outstanding user convenience

DR offers easy-to-use working environment to all customers (SI & end-users) with user-friendly SW platform and UI/UX

1. Easy Connecting



Doosan Mate

Provides SW environment for easy connection between various tools(EOAT(1)) such as Gripper

2. Easy Teaching



Cockpit Function

Able to directly pre-set simple motions without any complex programming

3. Easy Programming



Task Editor, Dart-Studio, etc.

Easy programming that does not require professional knowledge through functions such as Drag & Drop of pre-programmed application

Source: Company data

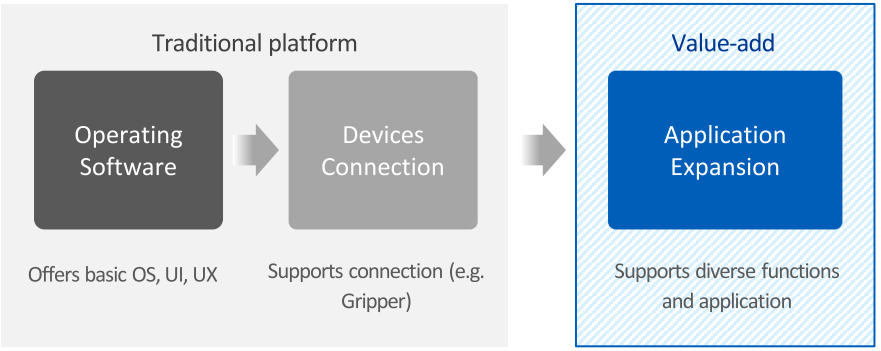
(1) End of Arm Tooling: An accessory that attaches to the end of a robot that allows the robot to perform a specific action, such as grabbing an object or tightening a screw



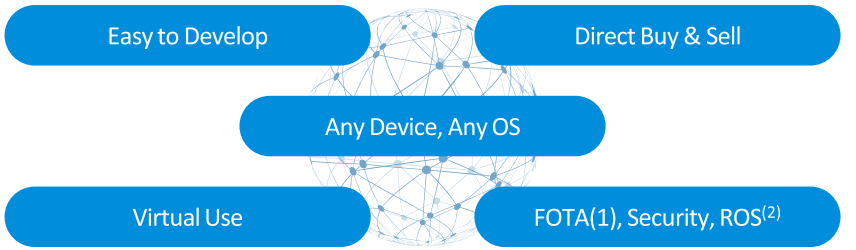
Establishment of a software platform

Dart-Suite is an integrated platform for all developers, creators, and users, providing a similar working environment to those of smartphone

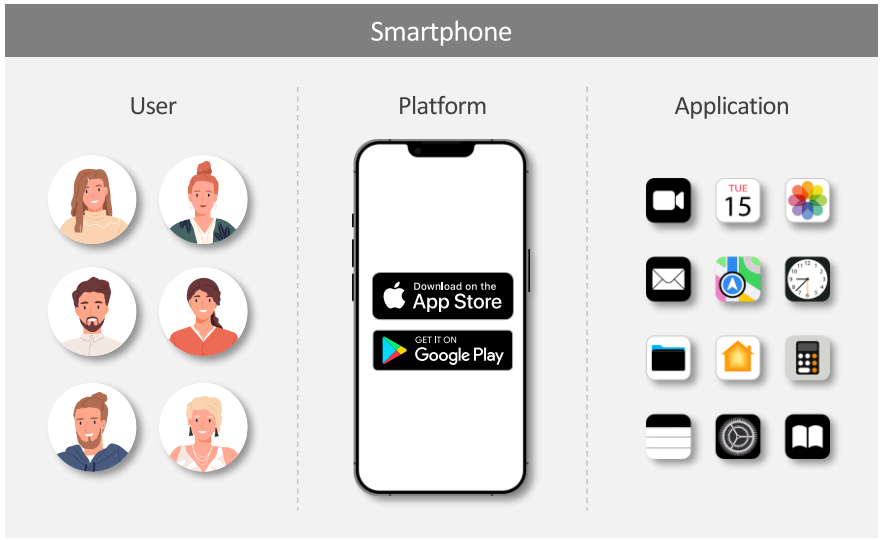
What is Dart-Suite?

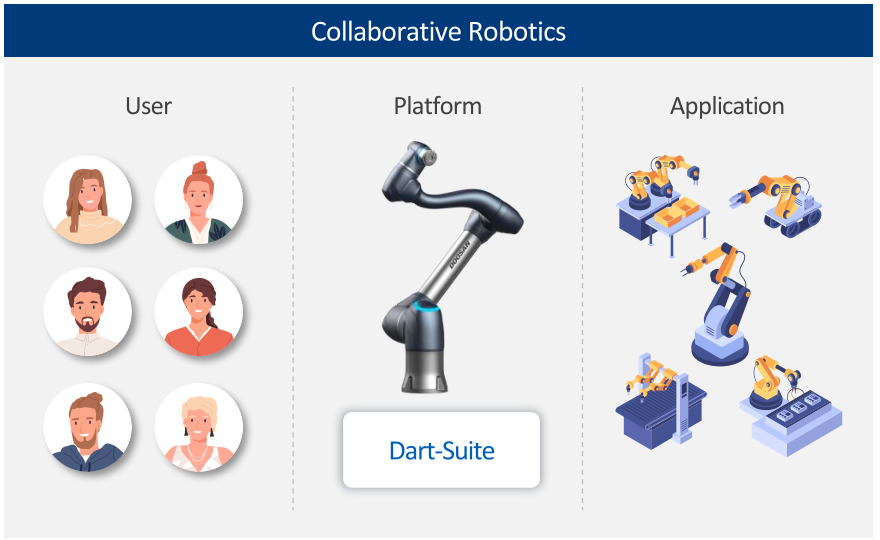


Dart-Suite Pros



Provides a convenient development environment to attract, lock-in customers, and generate revenue from App sales



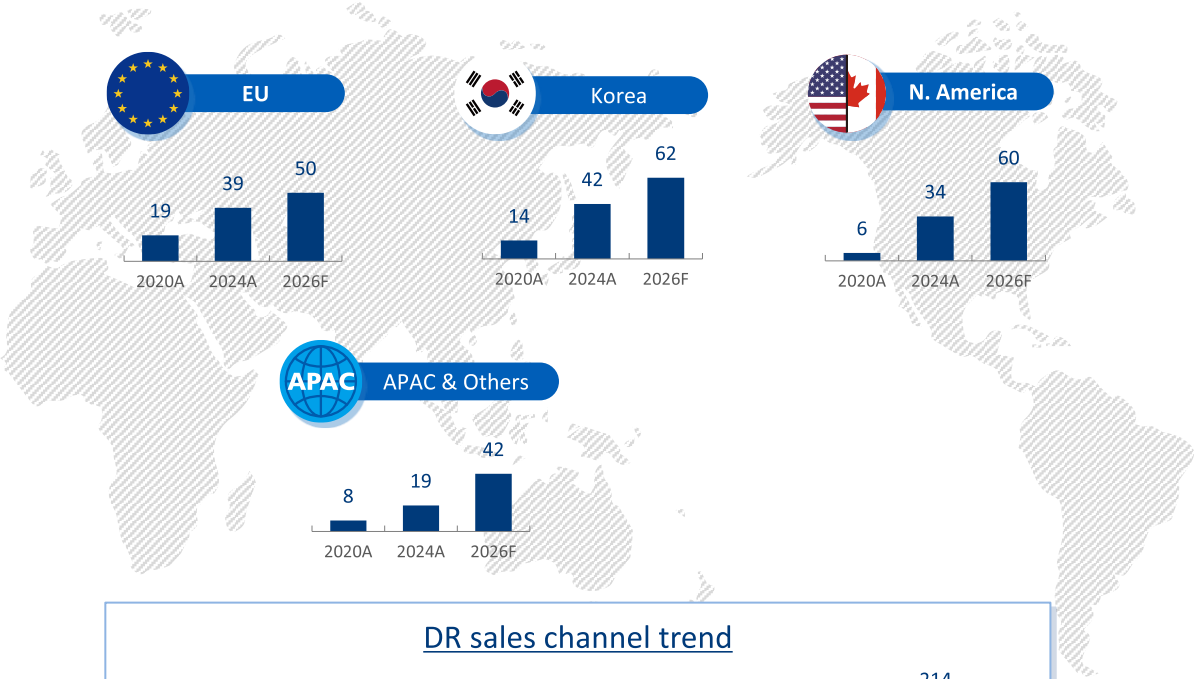


(1) FOTA(Firmware Over-The-Air): Updating Software remotely (First to developed and implemented in the robot industry)
(2) ROS: Robot Operating System

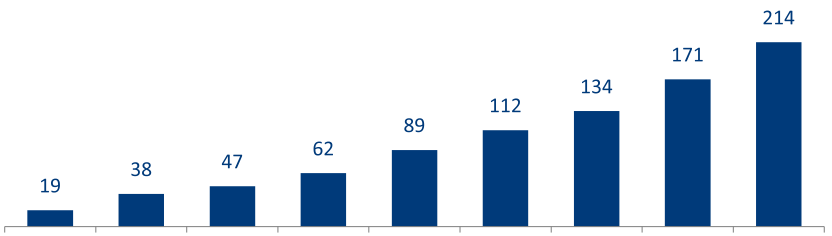
True global player with comprehensive sales network in advanced markets

DR possesses strong global presence with 100+ global sales channels, generating more than 60% of its revenue from overseas (North America, Europe, etc.)

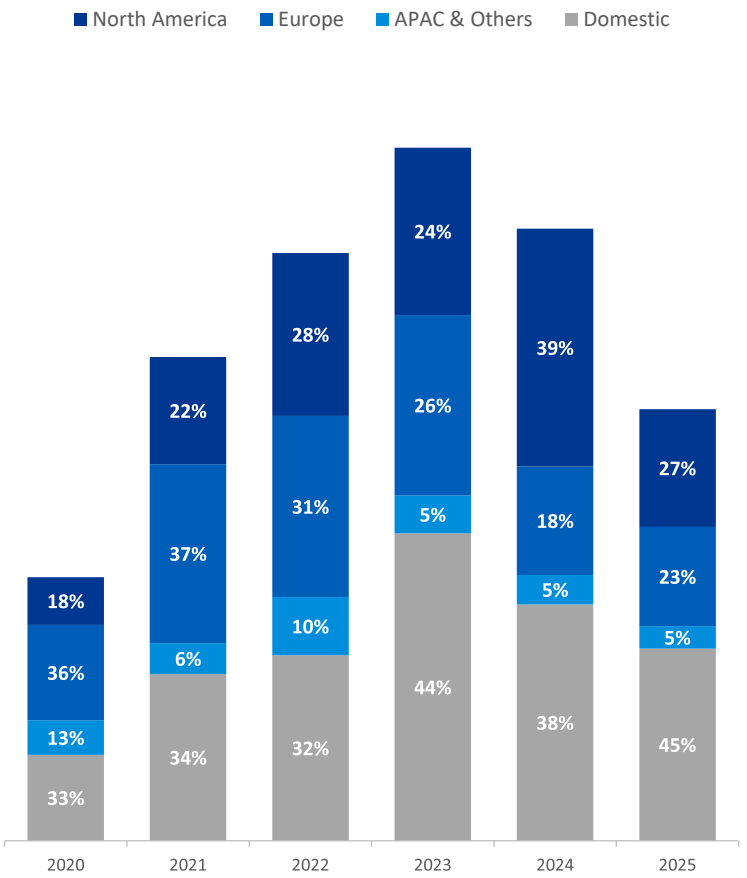
DR global sales network



DR sales channel trend



DR sales geography breakdown



Source: Company data

Proven track record

DOOSAN

DR is a trusted partner for a well-diversified group of blue-chip customers across major industries

DR's Global Customers



Source: Company data

Expansion through global partnerships

DOOSAN

Signed MOU with global leaders from various industries to jointly develop and exclusively supply robot solutions

Global IT Company A

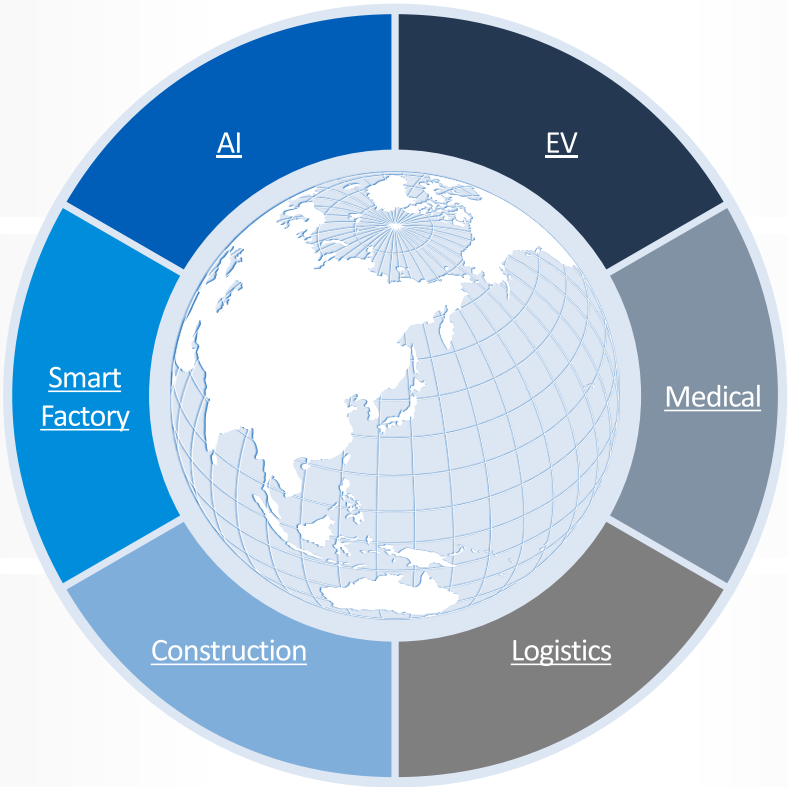
AI-Based
Robot Control
Solution



Global Battery Manufacturer B



Joint development of
automatic EV charging
solution



Rockwell Automation

Exclusive supply of
collaborative robots
in smart factories



세브란스병원
SEVERANCE HOSPITAL

Joint development of
medical solutions



SAMSUNG C&T

Joint development of
collaborative construction
robot solution



Cobot Lift

Joint-development of lift-
applied luggage solution



Source: Company data

Diversified application backed by accumulated know-hows

DOOSAN

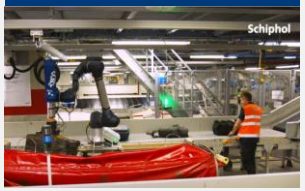
Able to flexibly expand into new markets and applications with accumulated know-hows with each Key Account, which takes 12 to 20 months of development/testing

Key Account's use cases

Industrials

Schiphol Airport, Netherlands

Baggage Handling



- Picks up a baggage from the transport conveyor with a cobot and automatically loads it into a cart

Safety equipment manufacturer A

Assembly



- Collaboration with human workers to screw parts and settle them on the conveyor

Automotive

Global Top Automobile OEM

Assembly



- Rear wheel shock absorber assembly

Automobile part maker B

Gluing



- Mat gluing for automotive moldings

Consumer Staples

Coffee Manufacturer C

Palletizing



- Product palletizing
- Sets speed limit tailoring to the human worker

Beverage Manufacturer D

Palletizing



- Product pack palletizing

Food Service

Chicken Franchise G

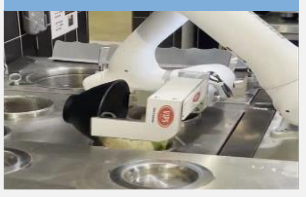
Fryer



- Automated chicken fry

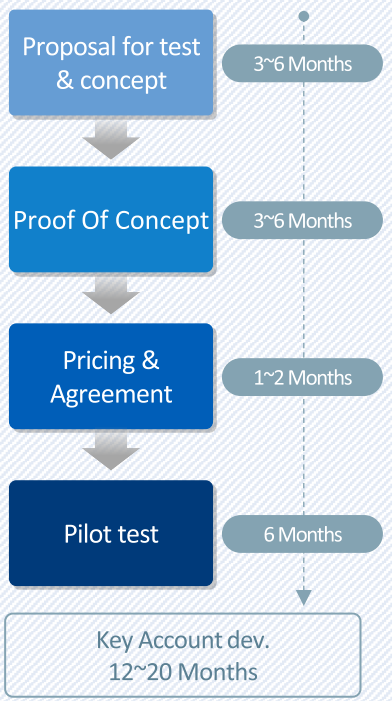
Restaurant franchise F

Noodle Cook

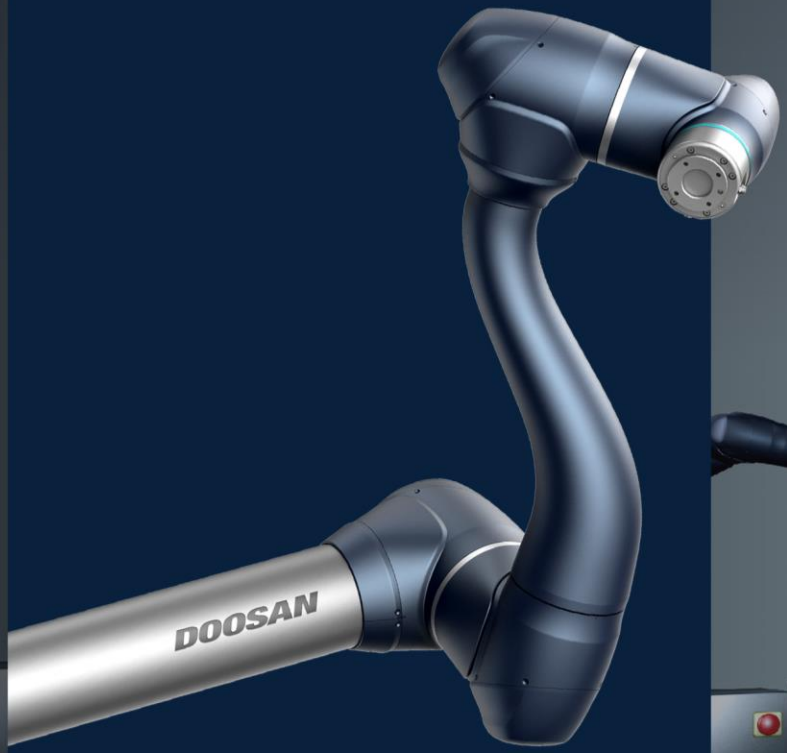


- Automated noodle making

Key Account Development



Source: Company data



Chapter 03

Our Way Forward

01. AI-based robot solutions model

02. Driving AI-driven innovation for Industrial Humanoids

03. Financial statements

Strengthening AI-based Robot Solutions business model

DOOSAN

Transitioning to AI robot solutions model integrated with Arm, S/W, and AI – departing from Arm-only sales

DR's AI-powered Robot Solutions

Robotic Core Technologies



Single Arm



Multi Arm

Optimized Arm & motion control by solutions

Field Automation Application Experience



Manufacturing



Service

High-completion solutions specialized for single-task

AI Intelligence



Proliferation of high-performance open-source AI models

Robot foundation models

Increase productivity and innovate user experience (UX)

Robotic and Sensor Data

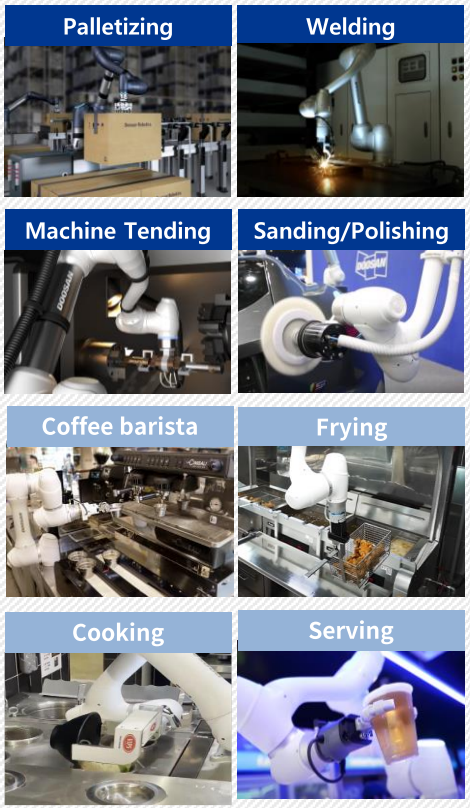


Obtain robotic operation and sensor data

Robot motion and sensor data

Solution application areas

Manufacturing | Service



Source: Company data

‘Industrial Humanoid’ commercially viable with skilled worker-level capabilities

DOOSAN

Targets an ‘Industrial Humanoid’ designed for real manufacturing use cases and commercial deployment

Latest technology of humanoid companies



- Simple Pick & Place (Automated parts transport)
  → Incapable of non-standard, complex task (mixed-part handling & assembly)

- Housework (laundry handling, kitchen tasks)
  → Incapable of diverse tasks in narrow, obstacle-rich home environments

- Boxing, acrobatic performances
  →No demand for task automation

General-purpose oriented, but limited in real-world task replacement and reliability

Doosan Robotics’ Industrial Humanoid



- AI technology
  –Perception: recognition of non-standard objects
  –Mobility: vertical and horizontal for extended operational range (Wheel-based)
  –Manipulation: motion optimization enhancing speed & quality (Cobot-based)

- Differentiation
  –Performing non-standard tasks at a skilled-worker level
  –Simplified product configuration to improve ROI

Leading Physical AI market through RFMs (Robot Foundation Model) based industrial Humanoids

Driving AI-driven innovation for Practical Humanoids

DOOSAN

Enhancing engineering and AI capabilities for AI robot solutions through M&A, global partnerships

Step 1 — Past

Cobot H/W

- Focusing development and sales on a single robot Arm

Become No.1 in Cobot

Step 2 — Now & Near future

AI Robot Solution

- A Plug & Play type AI robot solutions integrating Arm + AI + SW

Become a global leader of AI-driven robot automation

Step 3 — Future

The Most Practical Humanoid Robot

- Fully autonomous multi-tasking humanoid robot products with a practical design

Source: Company data

Financial statements

Consolidated Income Statement

Unit: KRWmn

	FY2022	FY2023	FY2024	FY2025
	K-IFRS, Audited	K-IFRS, Audited	K-IFRS, Audited	K-IFRS, Audited
Revenue	**44,954**	**53,038**	**46,830**	**32,978**
Cost of Goods Sold	30,710	38,378	37,300	28,560
Gross Profit	**14,244**	**14,660**	**9,530**	**4,419**
SG&A Expense	27,472	33,828	50,732	63,891
Operating Loss	**(13,228)**	**(19,168)**	**(41,202)**	**(59,472)**
Financial Income	819	4,389	15,439	9,521
Financial Expense	1,027	1,907	701	1,870
Other Non-op. Income	981	1,907	2,085	266
Other Non-op. Expense	93	309	11,744	3,432
Pre-tax income	**(12,548)**	**(15,874)**	**(36,553)**	**(55,495)**
Tax expense	-	-	-	-
Net Loss	**(12,548)**	**(15,874)**	**(36,561)**	**(55,495**

Source: Company data

Consolidated Balance Sheet

Unit: KRWmn

	FY2022	FY2023	FY2024	FY2025
	K-IFRS, Audited	K-IFRS, Audited	K-IFRS, Audited	K-IFRS, Audited
Current Asset	**38,837**	**426,105**	**342,029**	**266,961**
Cash & Cash Equivalent	7,430	305,424	265,536	156,739
Accounts Receivables	10,644	22,236	28,334	17,772
Inventory	13,391	14,154	29,307	19,010
Other Current Asset	7,372	84,291	18,852	73,440
Non-current Asset	**23,782**	**30,317**	**79,662**	**132,409**
PP&E & Intangible	15,973	21,657	18,826	72,316
Other Non-current Asset	7,809	8,660	60,836	60,093
Total Asset	**62,619**	**456,422**	**421,691**	**399,370**
Current Liabilities	**14,738**	**13,353**	**15,446**	**27,822**
Accounts Payable	3,875	5,894	4,321	4,333
Short-term debts	-	-	-	-
Other Current Liabilities	10,863	7,459	11,125	23,489
Non-current Liabilities	**5,116**	**4,261**	**3,743**	**22,954**
Lease Liabilities	3,418	3,773	1,691	13,001
Other Non-current Liabilities	1,698	488	2,052	9,953
Total Liabilities	**19,854**	**17,614**	**19,190**	**50,776**
Common Equity	**24,310**	**32,410**	**32,410**	**32,410**
Total Equity	**42,765**	**438,808**	**402,501**	**348,595**



www.doosanrobotics.com
Robotics.ir@doosan.com

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