



DOOSAN ROBOTICS

4Q/2024 Earnings Release

DOOSAN

Disclaimer

The information herein is provided for your information purposes only and contains preliminary figures which may be materially different from the final figures.

Forecasts and projections contained in this material are based on current business environments and management strategies, and they may differ from the actual results upon changes and unaccounted variables. We make no guarantees and assume no responsibility for the use of information provided. We trust your decisions will be based on your own independent judgment.

Financial data in this presentation is on a IFRS consolidated basis.

Chapter 1.

2024 Results

2024 Earnings Results (Consolidated)

- Decrease in sales due to deferred sales(KRW 8.7b) and market sluggishness amid delayed global economic recovery
- Higher expenses due to marketing activities such as CES, Automate and developing new line-up, setting Europe branch
- Widened net loss driven by advisory fees and other costs related to governance restructuring

Units: KRWmn, %

	'23.4Q	'24.3Q	'24.4Q	QoQ	YoY	2023	2024	YoY
Sales	16,876	10,034	11,490	+14.5%	-31.9%	53,038	46,830	-11.7%
Operating Profit	-3,098	-9,588	-16,858	-	-	-19,168	-41,202	-
EBITDA	-2,329	-7,964	-15,179	-	-	-14,812	-35,056	-
Net Income	-84	-6,882	-23,126	-	-	-15,874	-36,561	-
Net Debt	-382,006	-294,213	-275,216	-	-	-382,006	-275,216	-
Liability/Equity Ratio (%)	4.0%	4.5%	4.8%	-	-	4.0%	4.8%	-

Revenue breakdown by series, region

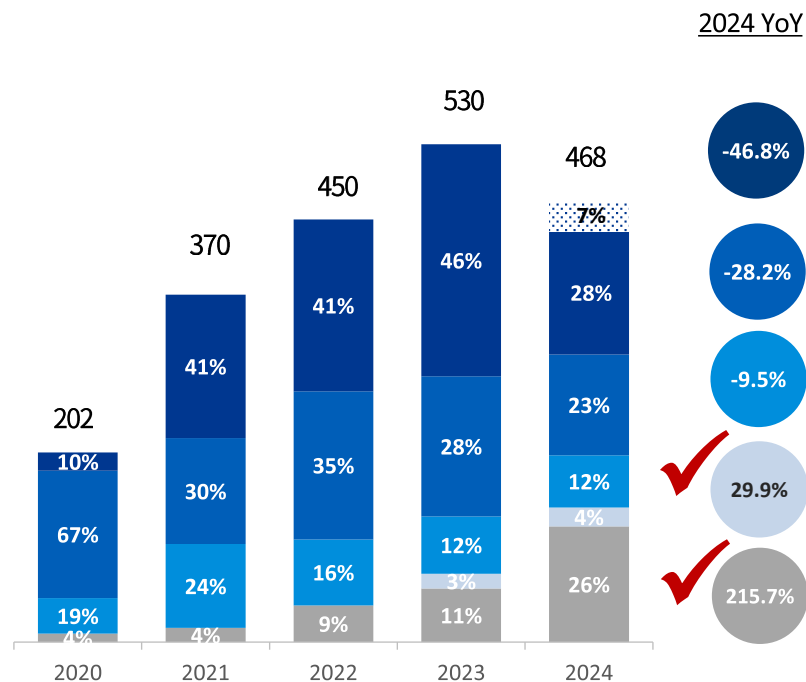
- US revenue up 42% backed by strong demand on automation amid sluggish global market
- EU revenue down 40% due to weak investment in the machinery manufacturing sector in Europe

[Revenue breakdown by series]

Unit: KRW00m, %

■ Solutions, Others ■ Series E ■ Series A ■ Series M ■ Series H

◆ Series P

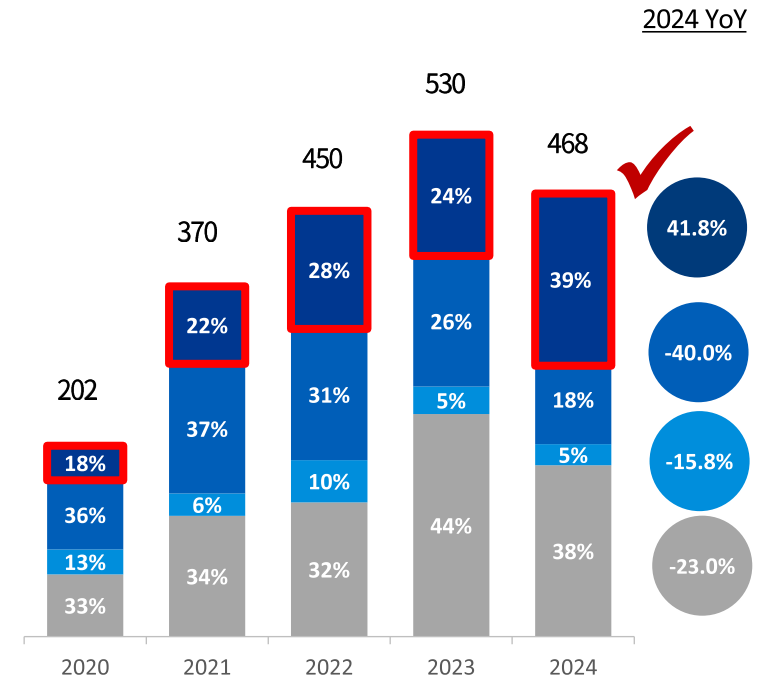


* Source: Company Data

[Revenue breakdown by region]

Unit: %

■ Domestic ■ APAC & Others ■ Europe ■ North America



* Source: Company Data

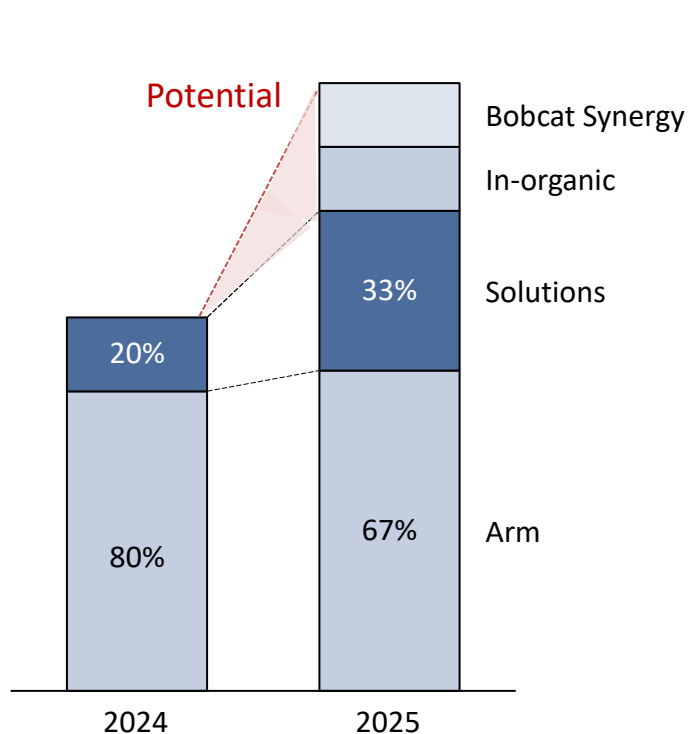
Chapter 2.

2025 business outlook

2025 Business outlook

- Robot arm sales expected to increase +22% YoY in 2025
- Higher ASP and improved profitability through expansion of solution business
- Securing solutions engineering capabilities and driving technology internalization via M&A, global partnership
- Pursuing synergy with Doosan Bobcat through channel cooperation in US market

Proportion of robot sales (%)



Potential

Synergy

In-organic

- Expanding palletizing solutions sales in US through channel cooperation with Bobcat

- Promoting M&A, partnership related AI solutions

Solutions

YoY
115%

- Palletizer : YoY +64%
- Service : YoY +251%

Arm

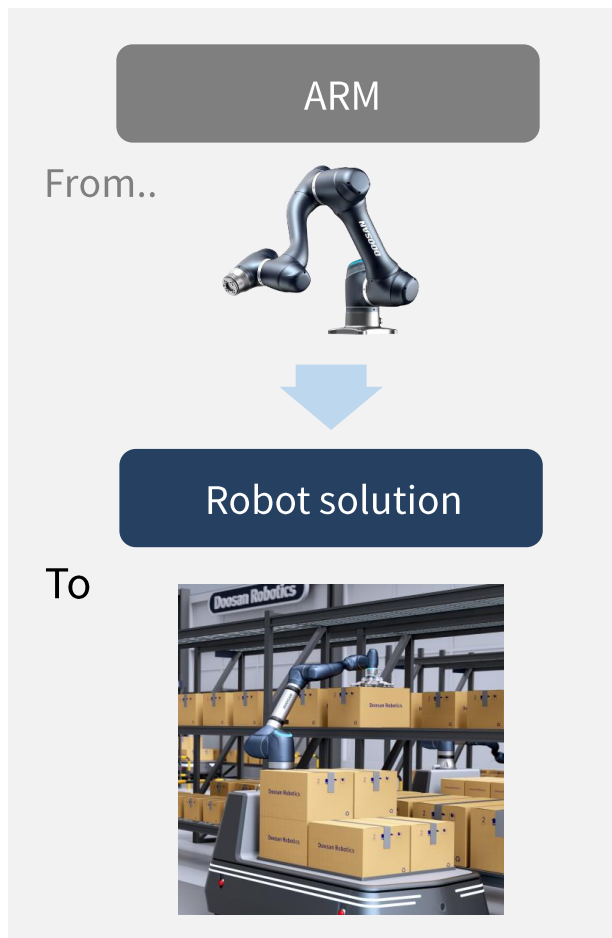
- No. of unit: 1,222(YoY -2%)
- Enhancing competitiveness in core arm technology

Total

- No. of unit : 1,501(YoY 22%)
- Higher revenue per unit via solution expansion

Strengthening business model to Robot Solutions

- Transitioning to AI robot solutions model integrated with Arm, S/W and AI – departing from arm-only sales
- Driving new market creation through enhanced user convenience, along with higher ASP, and securing strong profitability



Baggage Handling



- Picks up a baggage from the transport conveyor

Medical



- Assist laparoscopic surgery

Palletizing



- Product palletizing

EV Charging



- Automatic charging solution

Machine Tending



- Loading and unloading

Shooting



- Filming

Welding



- Automated welding

Coffee barista



- Automated barista process

Sanding/Polishing

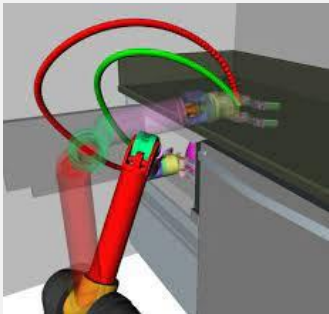


- Post-processing task that requires consistent quality

Enhancing productivity and user convenience of robot solutions using AI

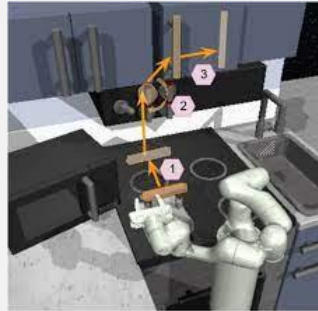
- Building an AI-driven development ecosystem for enhanced process productivity of robot solutions
- Providing optimized task path planning, complex motion control, and multi-robot operation capabilities

<Robot task path optimization>



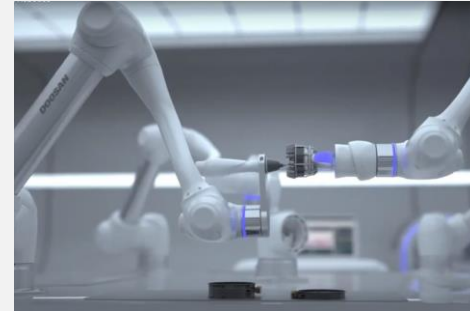
Reduced task time through route optimization

<Complex motion optimization>



Task sequence optimization for efficiency

<Multi-robot task optimization>



Expanding solution scope via multi-robot optimization

Doosan Real
& Virtual Robot



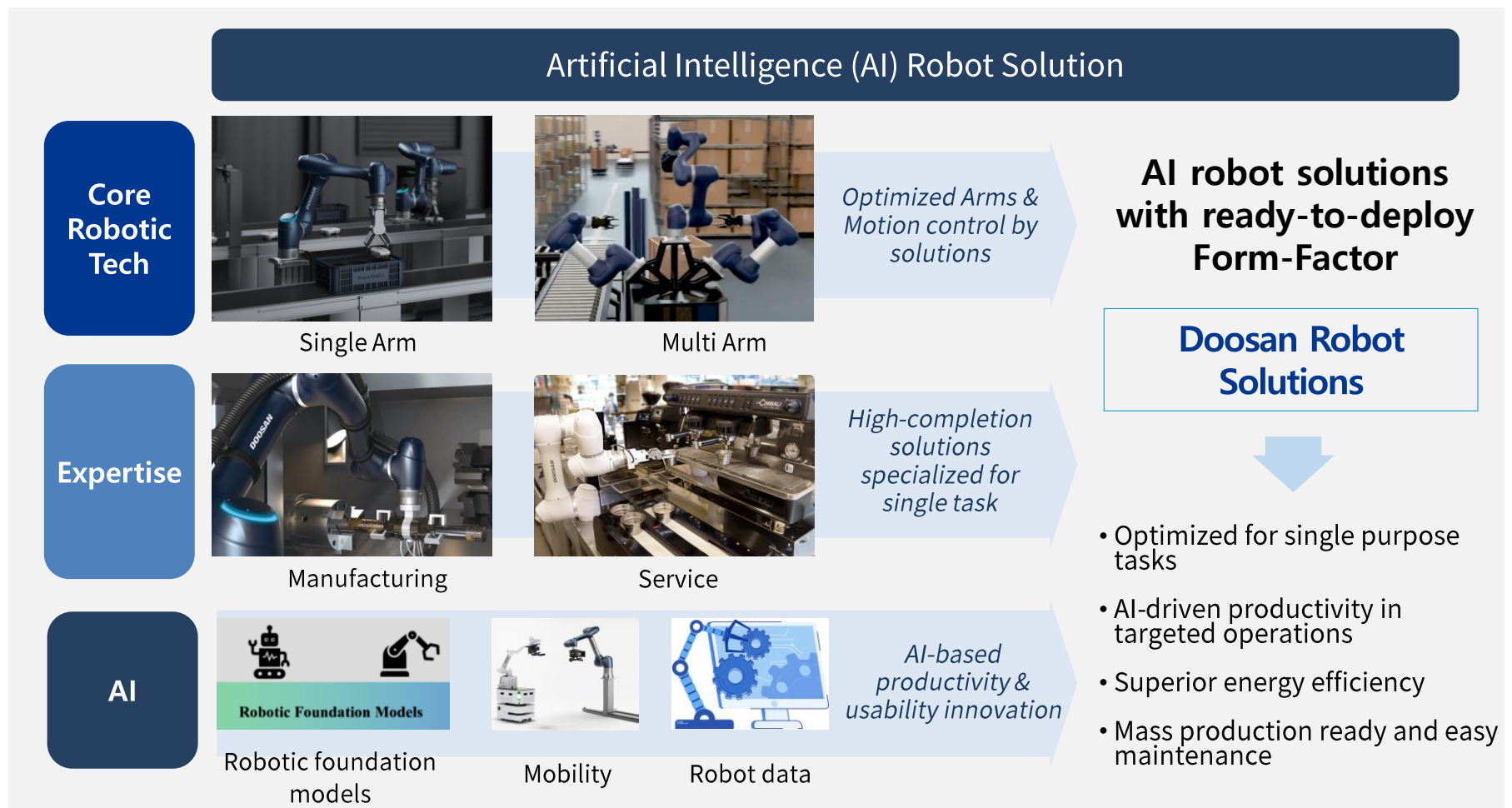
Doosan Robot AI Development Package



DRFL*

To-Be Business Model : Artificial Intelligence(AI) Robot Solutions

- Developing plug & play robot solutions model with mission-ready Form-Factor and embedded AI
- Enhancing engineering and AI capabilities for AI robot solutions through M&A, global partnerships



Growth strategy in US market through synergies with Doosan Bobcat

- Exploring additional opportunities on the current Doosan group governance structure
- Expanding US sales for palletizing solutions through channel cooperation with Bobcat
- Scaling up a business by strengthen sales capabilities in US market

Market lead in US, the largest automation market

- **North America and Europe are the largest markets in automation**
 - North America and Europe, with high labor cost, are expected to remain the two largest market for the next decade
 - Working-age population in high-income countries⁽¹⁾ 65% in 2022 → 60% by 2042
 - Labor Shortage after retirement of baby boomers
 - In US, increasing demand for new factories and automation solutions due to reshoring initiatives
- **Building a strong presence in US market**
 - Aiming for US Top 3 in collaborative robot status
 - Achieving market lead in packaging via high-payload series
- **Strengthening business capability for US market leadership and Bobcat synergy**
 - Planned 7 increase in sales staff, 4x in service staff
 - 3 new sales offices planned in US major city

Expected Benefits

- ✓ ① **Expanding presence in advanced markets**
 - Leveraging Doosan Bobcat's sales network in North America and Europe as a base for aftermarket service (Robotics c.#60, Bobcat c.#1,500)
- ✓ ② **Building reference by leveraging Bobcat**
 - Increase of captive sales based on the supply of factory automation solutions to 17 facilities
 - Utilization of Bobcat's production facilities as test beds for the development of new solutions and services
- ③ **Cross-selling of forklifts and palletizers**
 - Feasible to immediately provide palletizers to existing forklift customers
- ④ **Pre-emptive entry into the professional service market**
 - By collaborating with Bobcat, which has a global track record in construction, agriculture and logistics, new solutions like mobile manipulators will be developed to enter and secure a leading position in the professional services market

Chapter 3.

Appendix

Financial Summary

Financial Summary

Units: KRWmn, %

	2020.12	2021.12	2022.12	2023.12	2024.12	YoY
Total Asset	22,332	29,445	62,618	456,422	421,691	-34,731
Current Asset	12,005	19,663	38,837	426,105	342,029	-84,076
- Cash & Cash Equivalent	2,621	4,390	8,119	382,006	275,216	- 106,790
Non-current Asset	10,327	9,783	23,782	30,317	79,662	49,345
Total Liability	13,192	13,943	19,853	17,614	19,190	1,576
Current Liabilities	11,206	11,809	14,737	13,353	15,446	2,094
- Debt	3,000	-	-	-	-	-
Non-current Liabilities	1,986	2,134	5,116	4,261	3,743	-518
Total Equity	9,139	15,502	42,765	438,808	402,501	-36,307
Net debt*	379	-4,390	-8,119	-382,006	-275,216	106,790
Liability/Equity Ratio	144.4%	89.9%	46.4%	4.0%	4.8%	+0.8%pt

* Net debt : Debt – Cash & Cash Equivalent