



# Future Outlook

# Robot Industry Classification

Type		Use	Reducer requirements
I. Industrial Robots	Manufacturing robots for automobiles, smart phones, etc.	Prefabrication on the factory floor	High precision, high reliability
	Work robots	Light work on the factory floor	(items above) + light weight Low cost?
II. Service Robots	Professional robots	Healthcare, nursing care, rehabilitation, logistics, resource extraction, aerospace	Specifications designed for each use
	Consumer robots	Consumer appliances, hobbies, toys	Low Cost

Source: Prepared by the company based on IFR and KDDI Research Institute.

# Work Robots

Can work in line with people

**Do not require  
safety barriers**

**Easy  
configuration**

**Portable**



Source: Life Robotics Inc. home page.

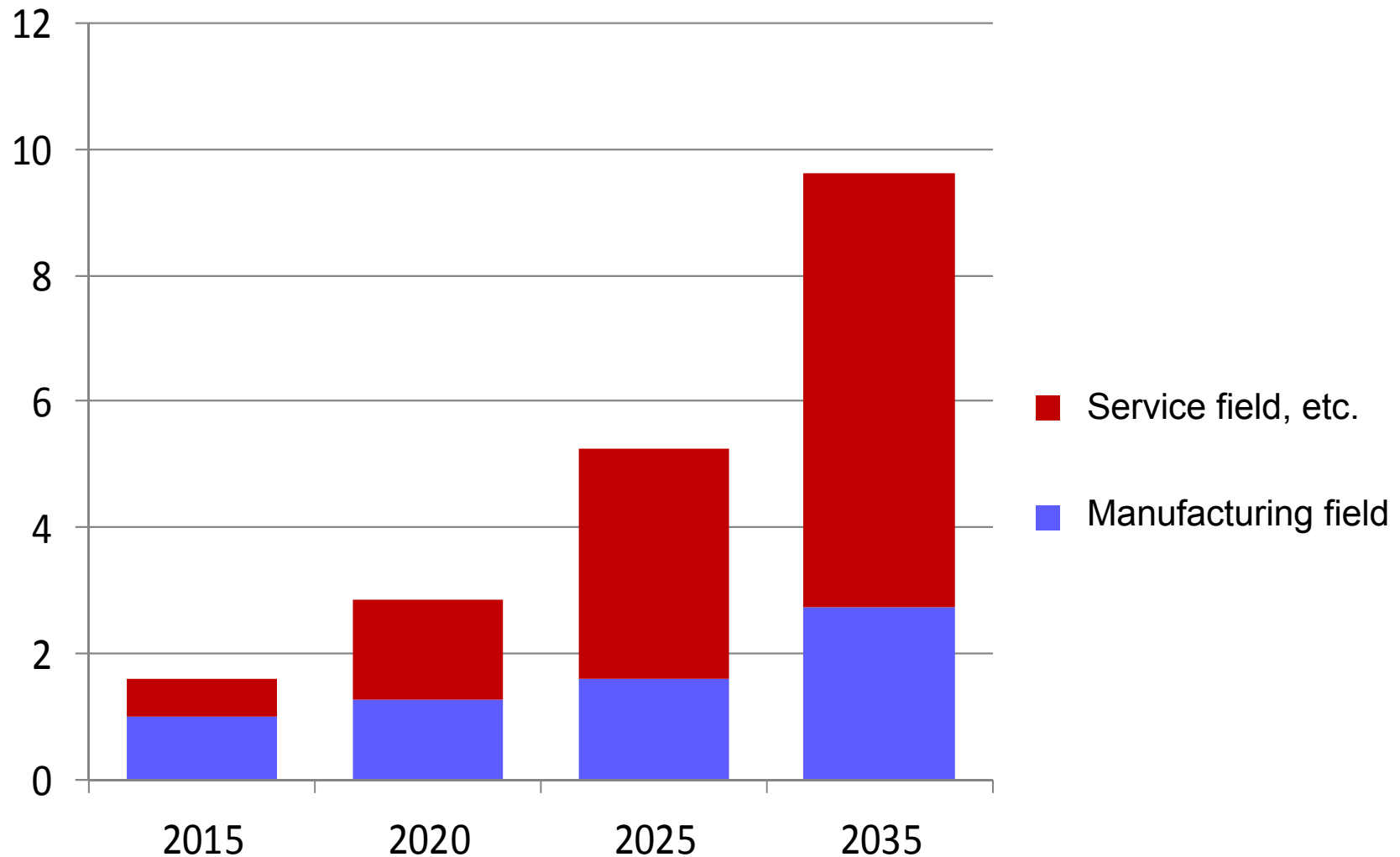


Source: Rethink Robotics, Inc. home page.

**Spread use for light work to cover personnel shortages**

# Robot Industry Growth Projection

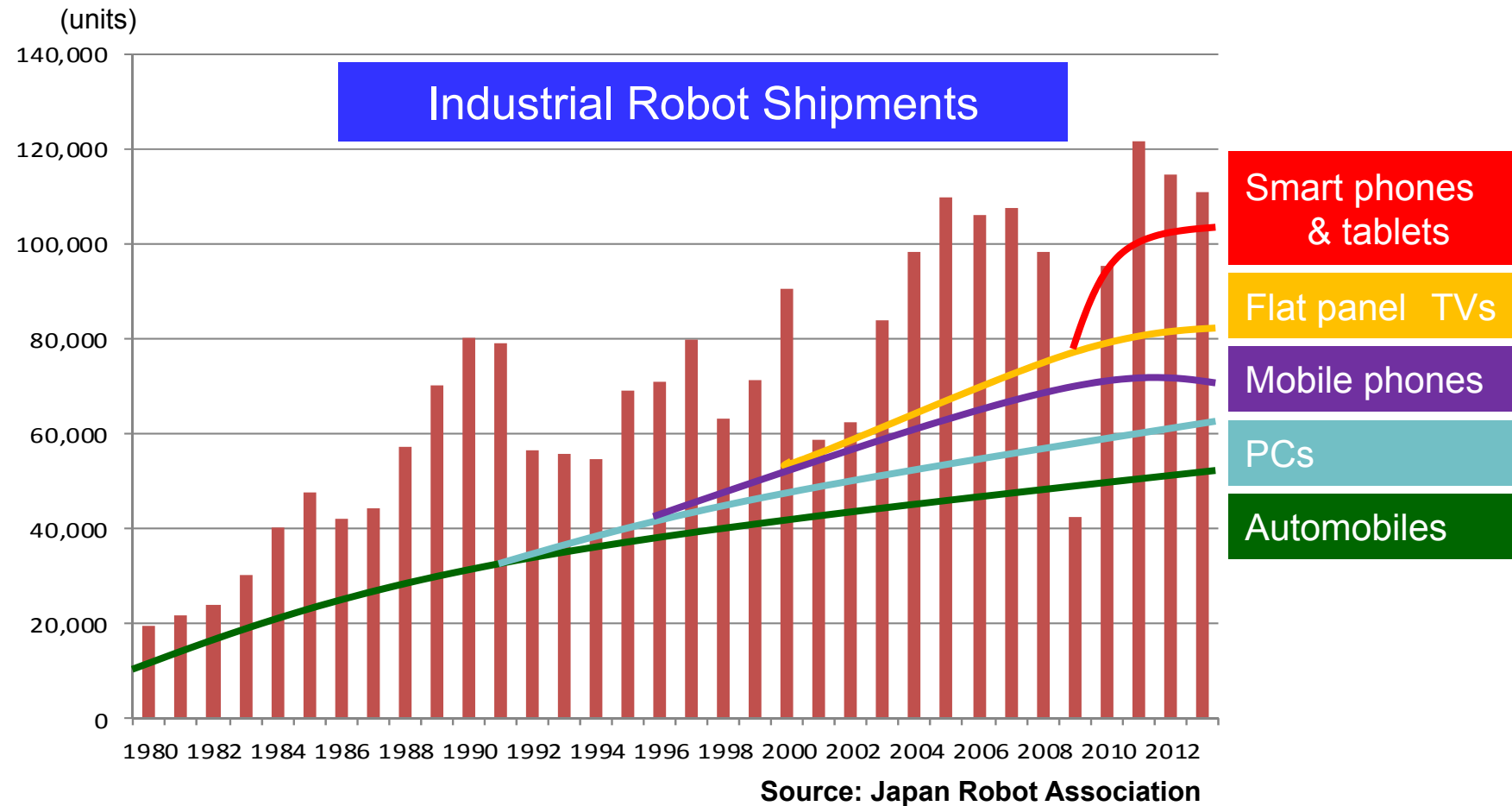
(Unit: ¥trillion)



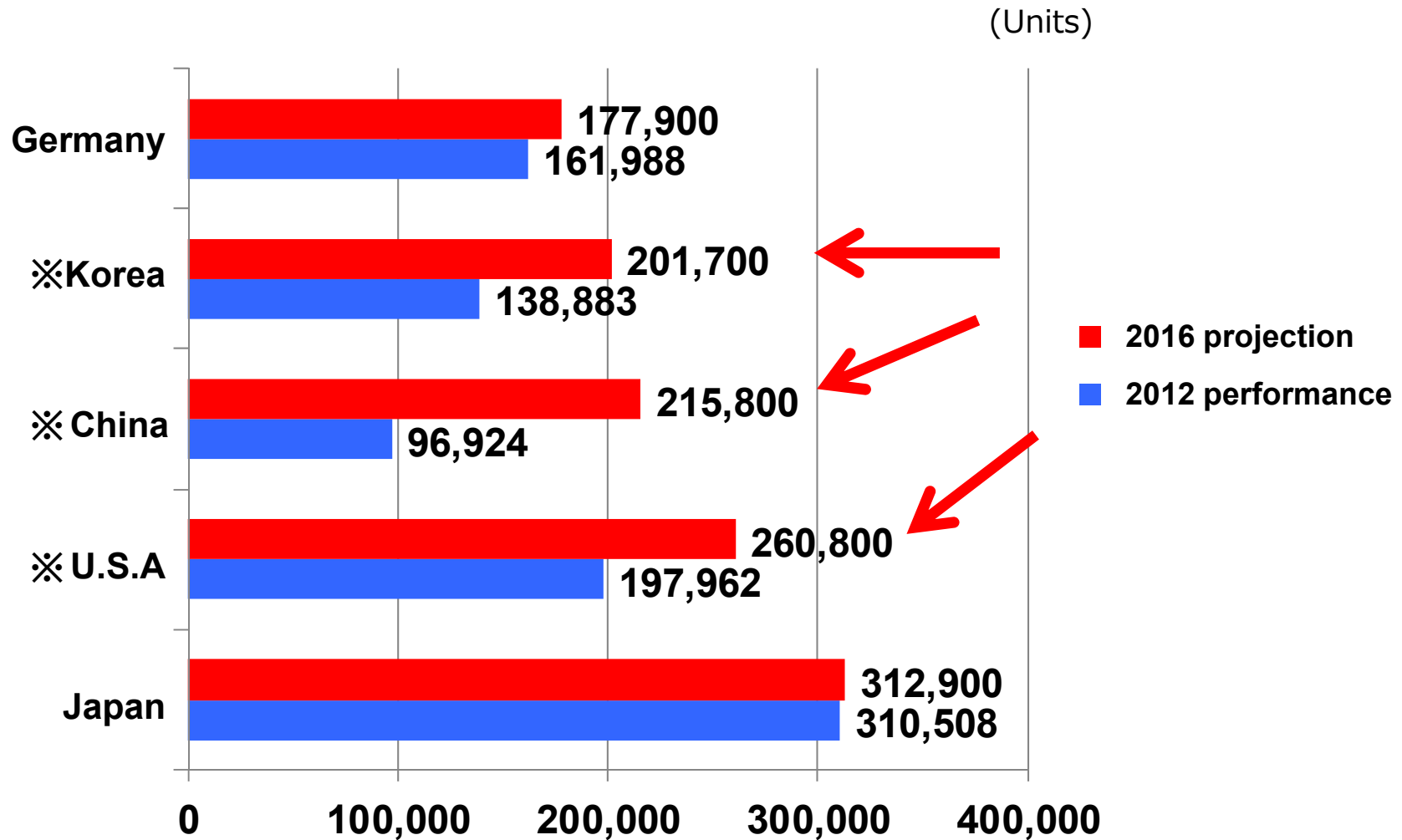
FY2010 METI/NEDO Future Robot Industry Market Survey

# Growth Trends in Industrial Robot Market

The emergence and growth of devices with major impact on lifestyles are driving demand for industrial robots



# Industrial Robots in Operation Projection



Source: IFR

# Potential of Professional Robots

**High precision,  
high reliability**

Surgical robots



Heavy-work  
humanoid robots



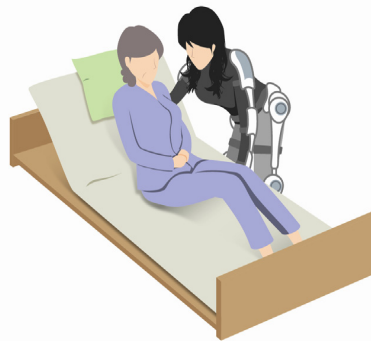
Aerospace



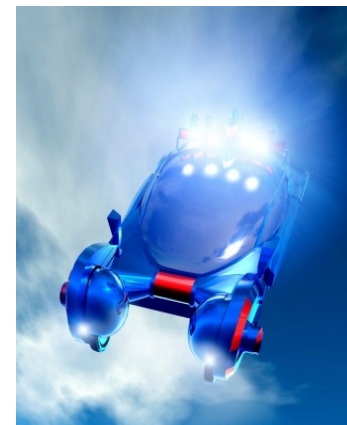
Source: DARPA Robotics Challenge

**Specifications  
designed for  
each application**

Healthcare & nursing robots



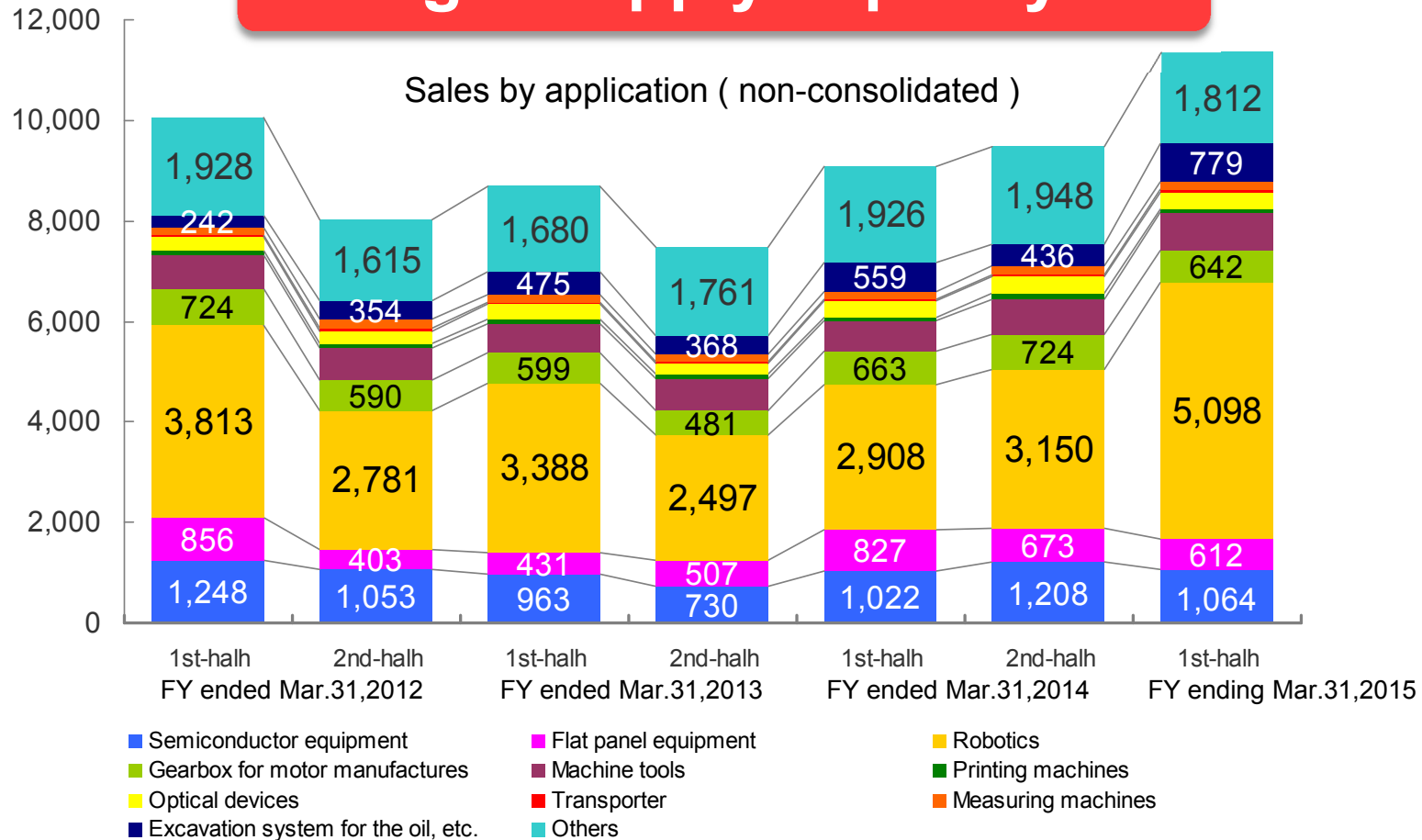
Next-generation mobility



# Sudden Increase in Demand for Robot Use

(millions of yen)

**Tight supply capacity**



**Regular production ceiling of ¥1.8 billion/month**



# Response to Future Demand Increases

## Harmonic Drive Systems

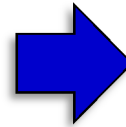
Hotaka Plant  
capital investment

- Investment to increase supply capacity
- New building to be completed March 2016
- Active introduction of automation

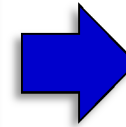
Increase regular monthly production of the Harmonic Drive® high-precision control speed reducer

[Future]

40,000  
units per  
month



50,000  
units per  
month



XXX  
units per  
month

## Harmonic Precision

Investment to increase cross roller bearing production to match the regular monthly production capacity of the Hotaka Plant

## Harmonic AD

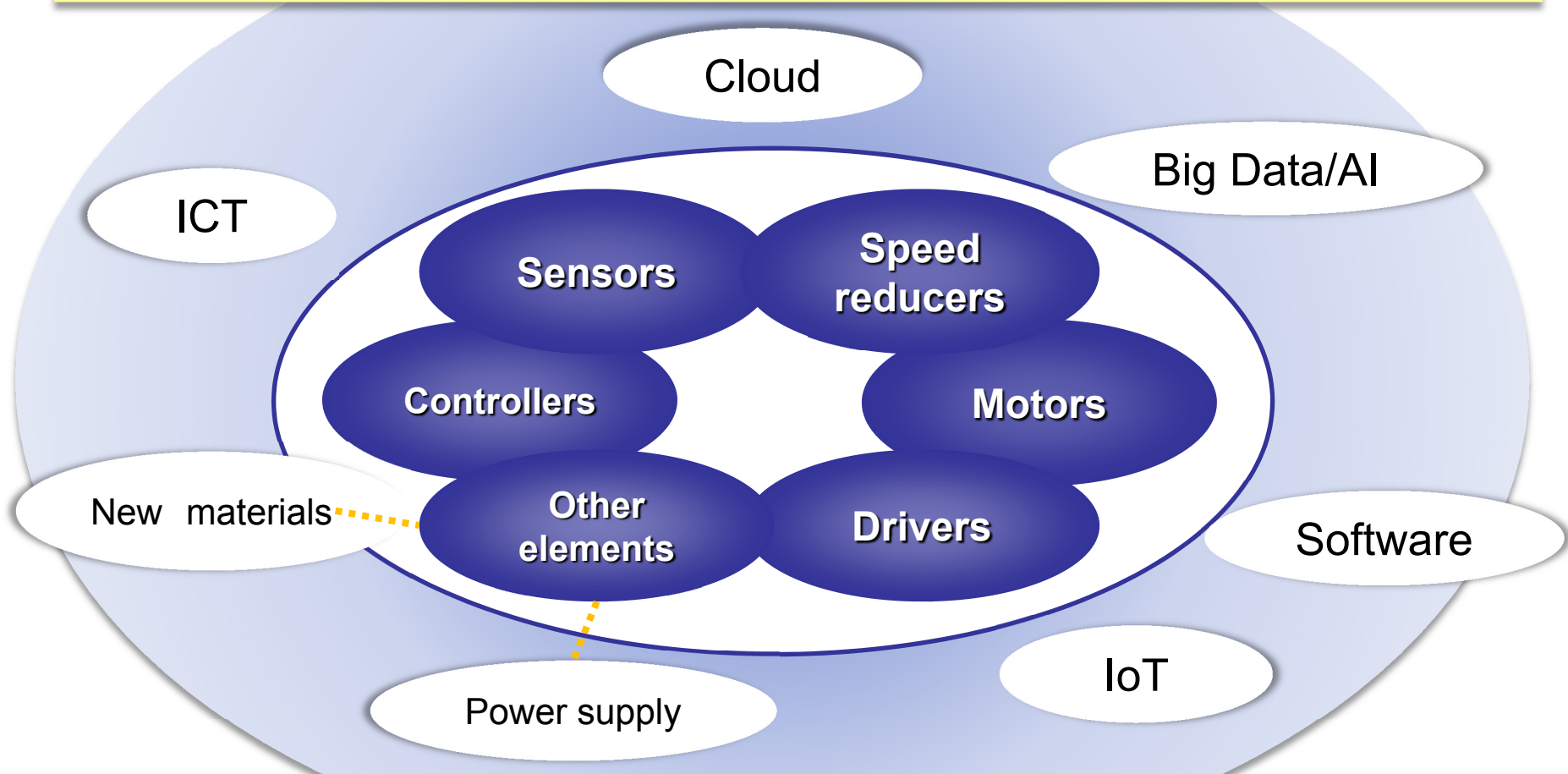
Capital investment centered on in-house manufacturing of planetary gear reducers

# Total Motion Control

HDS Group  
business domain



Provision of the value “total motion control”



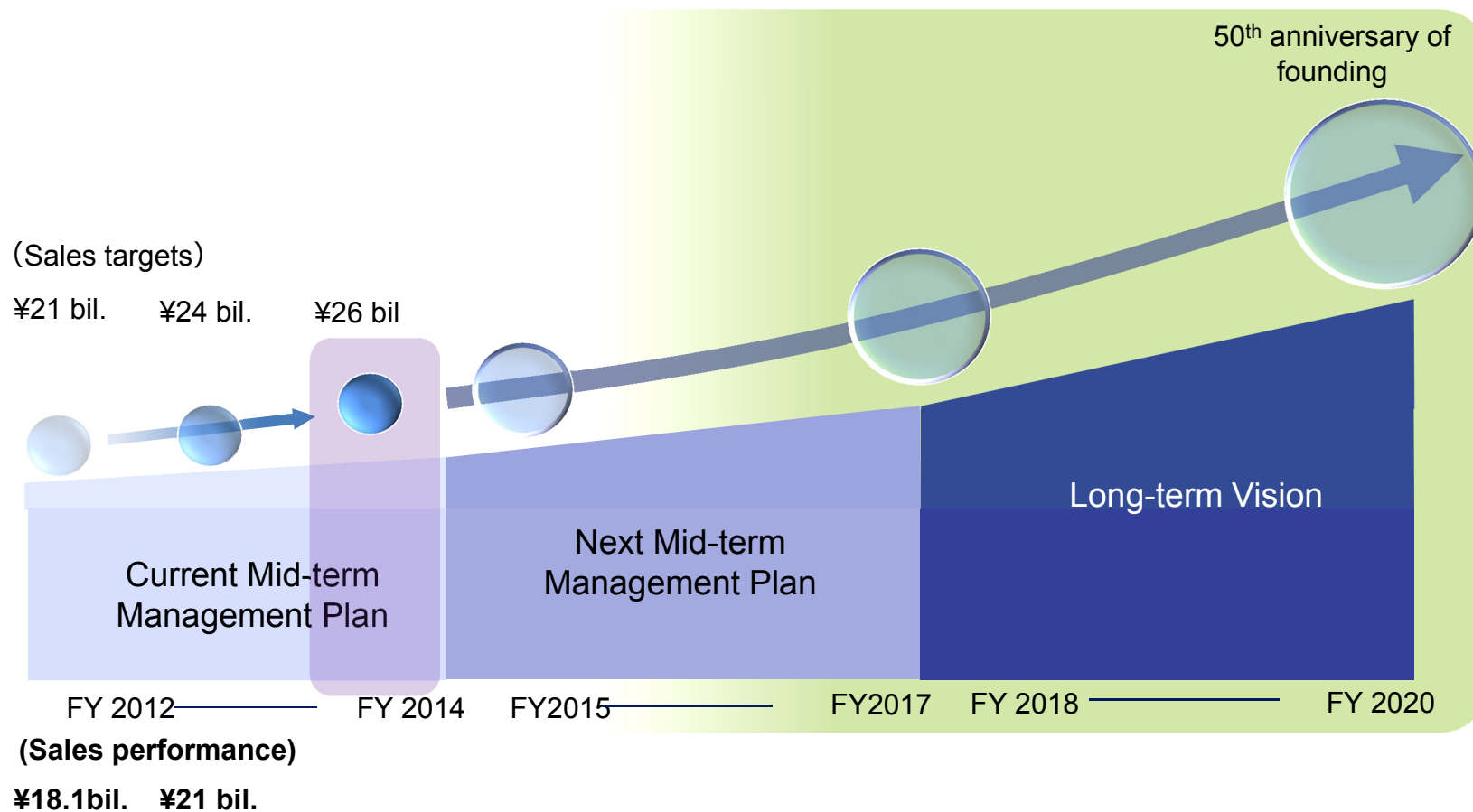
Affects the company's business field



To smart robots

# Envisioning Growth

## On to a new growth stage



The performance targets and other numerical data presented herein are forecasts based on information available to the HDS Group at the time this material was prepared, and are subject to the influence of uncertainties including those in the economic and competitive environment. Actual performance may therefore differ materially from the forecasts given in this material.

***Harmonic Drive Systems Inc.***

For more information:

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