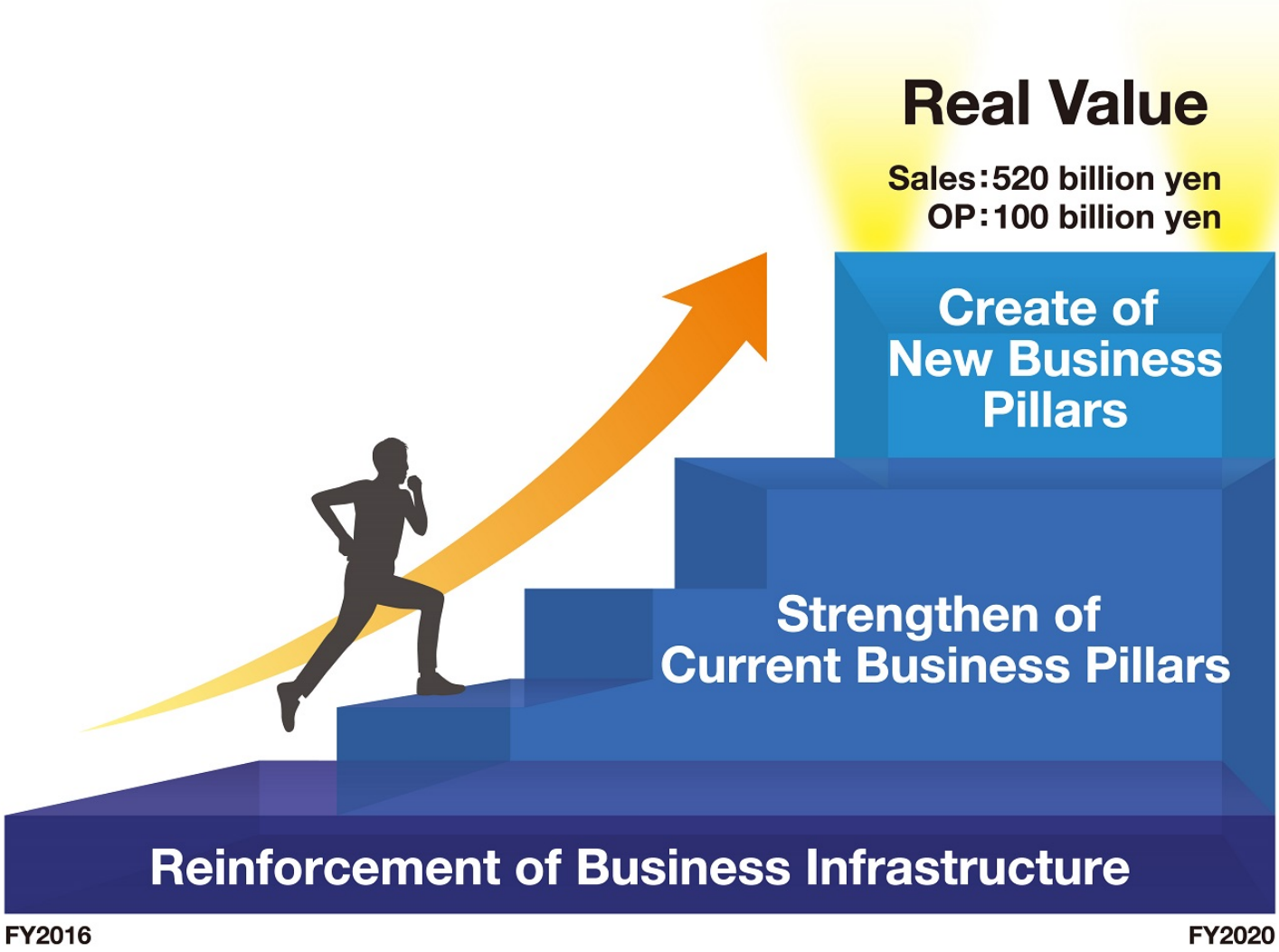
MID-TERM MANAGEMENT PLAN for “REAL VALUE”

April 12, 2016

Shinichi Odo
Representative Director and Chairman of the board
Chief Executive Officer
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The outline image of the 7th Mid-Term Management Plan



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The outline of the 7th Mid-Term Management Plan

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Summary: The 7th Mid-Term Management Plan

Evolving phase is the final term of our long-term management plan.
The 5 years mid-term plan is made to deliver “Real Value” in FY2020.

>> Delivering “Real Value” to all stakeholders in FY2020.



FY2010 to 2012	FY2013 to 2015	FY2016 to 2018
Delve into existing business and seek new business	Launch new products or new business	Develop existing and new business at an accelerated rate

NGK SPARK PLUG in 10 years

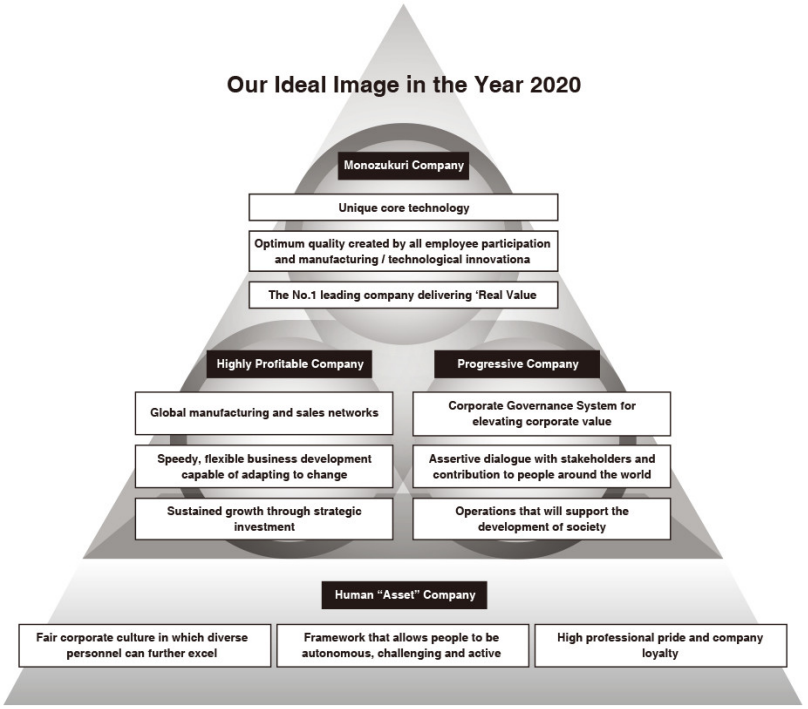
- Monozukuri Company
- Highly Profitable Company
- Progressive Company
- Human ‘Asset’ Company

The 7th mid-term Plan
FY2016 to FY2020

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Our Ideal Image in the Year 2020

Redefined to adjust environmental changes to offer “Real Value”



Monozukuri Company

“Unique core technology”
“Optimum quality created by all employee participation and manufacturing / technological innovation”
“The No.1 leading company delivering ‘Real Value’”

Sales: 500 billion yen

Highly Profitable Company

“Global manufacturing and sales networks”
“Speedy, flexible business development capable of adapting to change”
“Sustained growth through strategic investment”

OP: over 20%

Progressive Company

“Corporate Governance System for elevating corporate value”
“Assertive dialogue with stakeholders and contribution to people around the world”
“Operations that will support the development of society”

ROIC Oriented
CSR Oriented
IR・SR Oriented
Speed

Human “Asset” Company

“Fair corporate culture in which diverse personnel can further excel”
“Framework that allows people to be autonomous, challenging and active”
“High professional pride and company loyalty”

Diversity
Challenge
Global
Fair

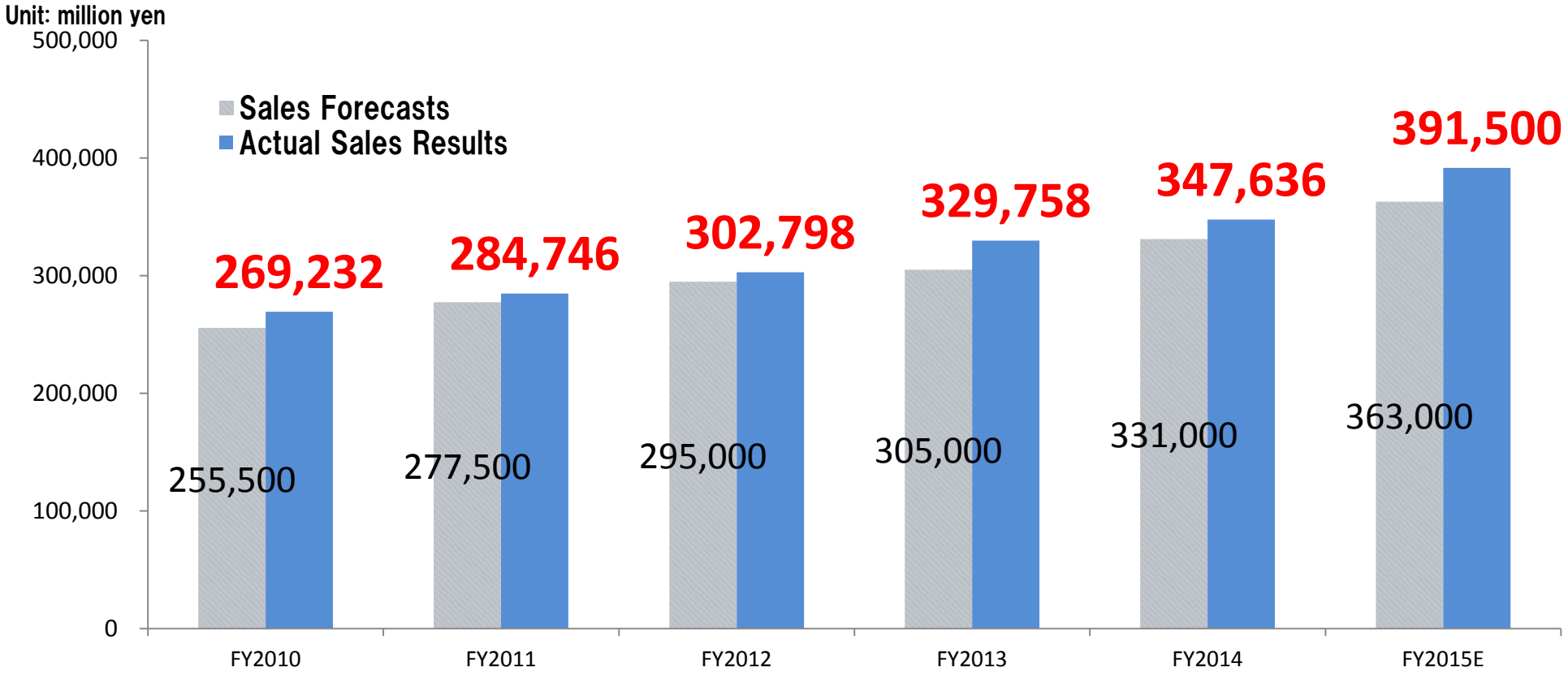
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Review of the Evolution of NGK SPARK PLUG



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Review of the Evolution of NGK SPARK PLUG –Sales Results-



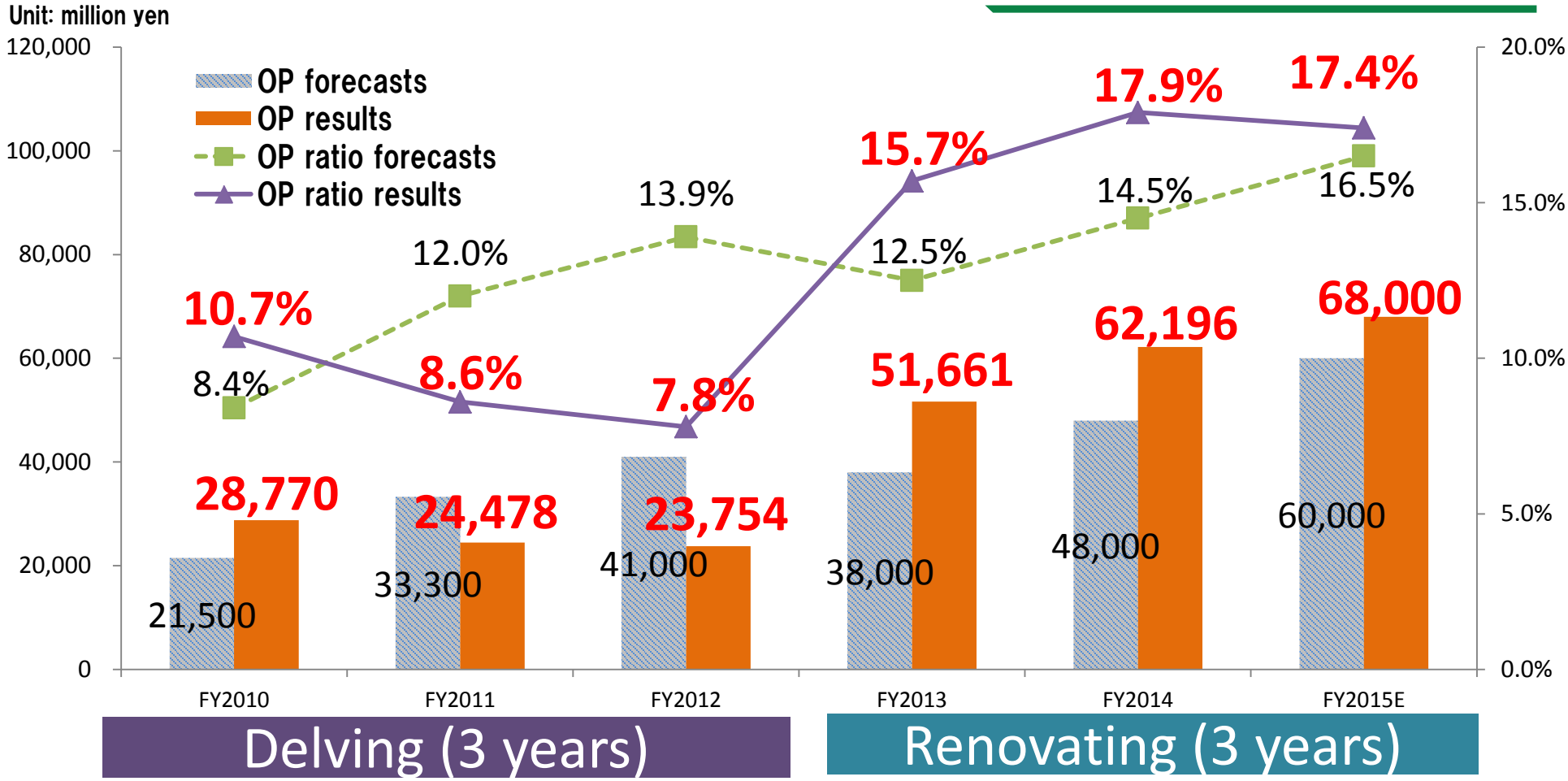
Delving (3 years)

Renovating (3 years)

$1	86 yen	79 yen	83 yen	100 yen	110 yen	118 yen
€1	113 yen	109 yen	107 yen	135 yen	139 yen	132 yen

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Review of the Evolution of NGK SPARK PLUG –Operating Profits-



$1	86 yen	79 yen	83 yen	100 yen	110 yen	118 yen
€1	113 yen	109 yen	107 yen	135 yen	139 yen	132 yen

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Review of the 6th Mid-Term Management Plan –Actions and Management Issues-

Actions of the Renovating Phase

- Selection and Concentration

-Acquisition of Wells
-Joined NIHON CERATEC as a group subsidiary
-End of Organic Package production
-Transferred Dielectric business to MARUWA
-Transferred assets of the ceramic tube business for the vacuum circuit breakers to CUMI, India

- Creating New Business Pillars

-Signed Basic Agreement on Business Tie-up in Cylindrical Cell Stacks Used in SOFCs with MHPS
-Business capital tie-up contract of the asthma monitoring system with Spirometrix
-Released Oxygen Concentration Instruments “KM5 5touch” in Japan
-Released Hydrogen Leak Detection sensor
-Business tie-up with FOMM, Electric Cars



SOFC


Hydrogen Leak Detection Sensor


Oxygen Concentrator

Our Issues to be solved

- Changing our products portfolio, decreasing our reliance on internal combustion engines parts.
- Establishing New Business Pillars
- Strengthening our business infrastructures

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Outline of the 7th Mid-Term Management Plan

Delivering "Real Value" to all stakeholders in FY2020

Strengthening Current Businesses

- Increasing shares in China & India, Developing countries
- Strengthening Products for Environmental Regulations
- Promoting Automotive parts utilizing Wells
- Regeneration of Ceramic Package Business
- Promoting Parts for Ceramic Production Machines with NTK Ceratec

Establishing New Business Pillars

- Launching Next Generation Vehicles and the other automotive products
- Realization of Environment / Energy / Medical business pillars

Establishing Strong Business Infrastructures

- Implementing Management Decision with speed in a global perspective
- Fair treatment of human resources in globally
- Organizational reform to visualize responsibilities and authority, and to manage all divisions

Slogan for the 7th Mid-Term Plan **Accelerating Current & New Businesses**

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Business Strategies

1. Strengthening Current Businesses

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Exploiting Developing Countries

Price of Cars	Segment
Over 150,000 yuan	luxury car
80,000-150,000 yuan	Middle class car
60,000-80,000 yuan	Lower-Middle class car
Under 60,000 yuan	Lower class car
Under 50,000 yuan	Low priced car

e.g. China

High-end
(obtained)

exploit

Volume Zone



Low-end

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1-1. Strengthening Current Businesses -Plugs

Offering competitive products required in developing countries such as features, qualities and prices

Strategy	Action plans
Gaining market shares in developing countries	<China> • Promoting CX precious plugs and CX Ni plugs • Leveraging brand image of CX Ni plugs in the market <India> • Promoting sales supports → Gaining shares
Gaining OEM applications for AM	• Gaining OEM applications for future AM sales

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1-2. Strengthening Current Businesses -Sensors

Establish Competitive advantages in Technology and collaborate with system manufacturers to regulations

Current Sensors / secure profits

High-value added / Improve profitability

Strict Regulations



Promoting OZ Sensors



Promoting Temperature Sensors



Promoting New UEGO Sensors



Promoting NOx Sensors

Developing PM Sensors

CHINA 5 (EURO5)

Brasil (EURO6)

Europe EURO7

*for automobiles

FY2016

FY2018

FY2020

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1-2. Strengthening Current Businesses -Sensors

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Establish Competitive advantages in Technology and collaborate with system manufacturers to regulations

Strategy	Action plans
Current Sensors: secure profits	• Promoting OZ Sensors for developing countries • Promoting Temperature Sensors further
High-value added Sensors: Improve profitability	• Promoting NOx Sensors • Promoting New UEGO Sensors • Promoting OZ Sensors (Motorcycles)
Finding seeds in next products	• Developing PM Sensors • Finding seeds in next products

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1-3. Strengthening Current Businesses -Wells

Launching new AM business utilizing our AM channels and Wells' products

North America
Establish a competitive advantage in DIFM(Do it for me) market

Developing Countries
Delivering a new service with a price competitive product

Global Strategy
1. **Promoting Ignition Coils**
2. **Technology and Production optimization**



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Launching new AM business utilizing our AM channels and Wells' products

Strategy	Action plans
Global	• Promoting Ignition Coils utilizing our channels • Strengthening Technology with collaboration with partners to correspond customers' requirements
Regions	<North America> • Establishing a competitive advantage in DIFM (Do it for me)* market besides retails *DIFM(Do it for me):entrust repairs to dealers or garage companies <Developing Countries> • Delivering a new service with a price competitive product

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1-4. Strengthening Current Businesses –Ceramic Packages

Reforming organization by utilizing outer resources for the growth and regeneration

1. To be an independent subsidiary
2. “Selection and Concentration” of products
3. Reconsideration of facilities
4. Inviting Management Talent



Make a Profit in the end of FY2018

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1-4. Strengthening Current Businesses –Ceramic Packages

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New Organization

Management Talent



To be an independent subsidiary

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<Roles>
Manufacturing
＋
R&D/Planning/Admin.
Sales/Promotions
Purchasing





considering



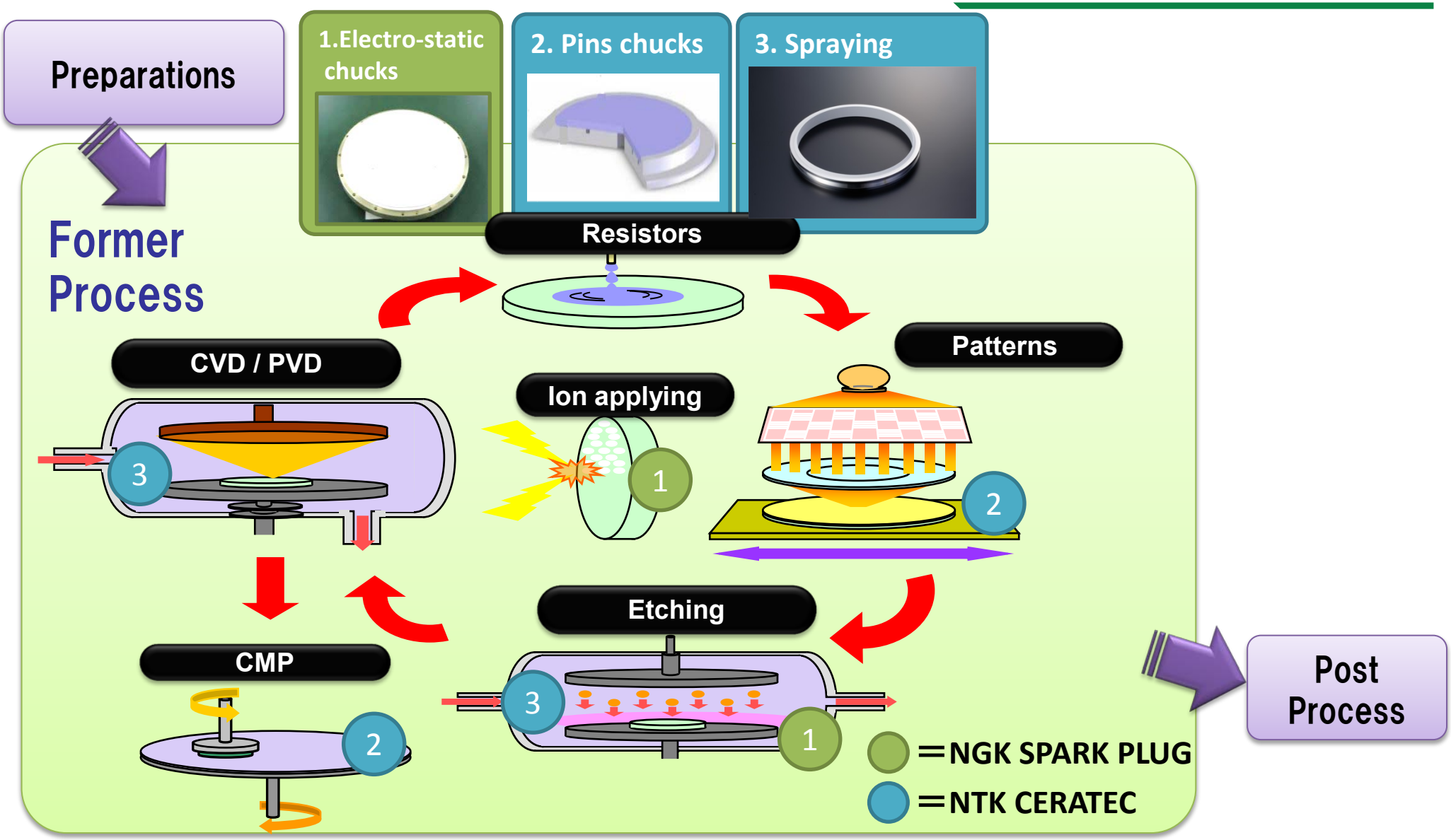


- NTK Ceramic to be an independent subsidiary
- “Selection and Concentration” of products
- Reconsideration of facilities
- Inviting Management Talent

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1-5. Strengthening Current Businesses –Semiconductors



Source: Data book for Semiconductor Manufacturing Equipment, 2013, Yano Research

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1-5. Strengthening Current Businesses –Semiconductors

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Make a synergy with NTK CERATEC (ex NIHON CERATEC)
To be a top player in the Semiconductor Manufacturing Equipment

Strategy	Action plans
Adapting lamination technology to other products	• Adapting sheet lamination technology to other products combined core technology of NTK CERATEC ➡ To launch a product in the end of 2017
Promoting Electro-Static Chuck	• Developing new channels
Manufacturing at NTK CERATEC	• Establishing a post process production system of electro-static chuck ➡ Shortening LT and realizing cost down
Promoting spraying business	• Developing next spraying membranes
Promoting Refurbish business	• Promoting refurbish business combined with our sheet lamination technology and NTK CERATEC's refurbish technology

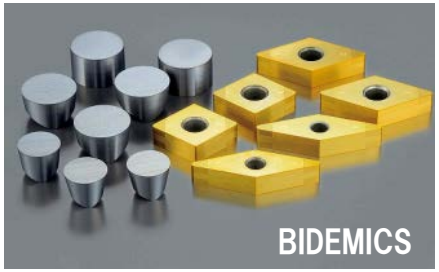
1-6. Strengthening Current Businesses –Cutting Tools

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Improve productivity of the plant and promote each targets

Strategy	Action plans
Absolute No.1 of Ceramic Tools	• Promote high-valued tools for the US aircraft industry and European automobile industry
Niche and Top of SS Tools(*1)	• Unique and original tools for contributing cost reduction of customers
Promoting business fields	• Developing a new pillar besides ceramic tools and SS tools 1. Diamond tools for Aluminum 2. CBN(*2) Tools for super hard materials 3. Drills

(*1)SS Tools: small tools to be used for manufacturing automobile, watch, camera, OA instruments
(*2)CBN Tools: tools for super hard materials used sintered ceramics









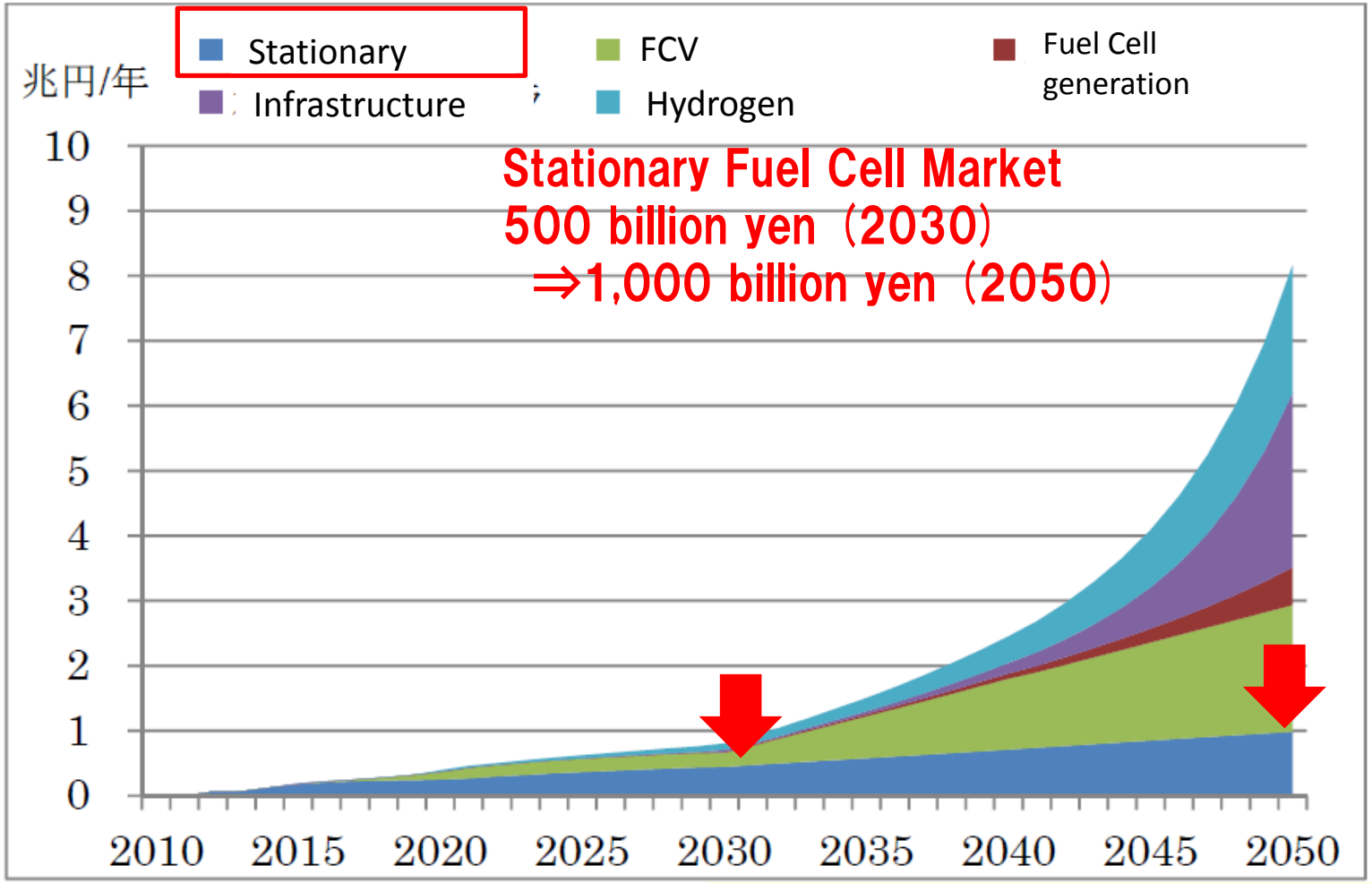
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Business Strategies

2. Creating New Businesses

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Estimation of Fuel Cell Energy Penetration in Japan



Source: Resources and Energy Agency

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2-1. Creating New Businesses –Fuel Cell





Power

Power Plant 1000kW~

dispersed power 250kW~

Industrial use 3~250kW

Domestic stationary use (overseas) 0.3~3kW (Japan) 0.4~1kW

Cylinder Type

Plate Type

Collaboration with MHPS

Large thermal power

Dispersed Power

Bio Gas Wood, Garbage

Industrial Use, City Gas

Natural Gas for Overseas domestic use

Japanese Domestic use LPG

Japanese Domestic use City Gas

2015 2018 2020 2025 2030

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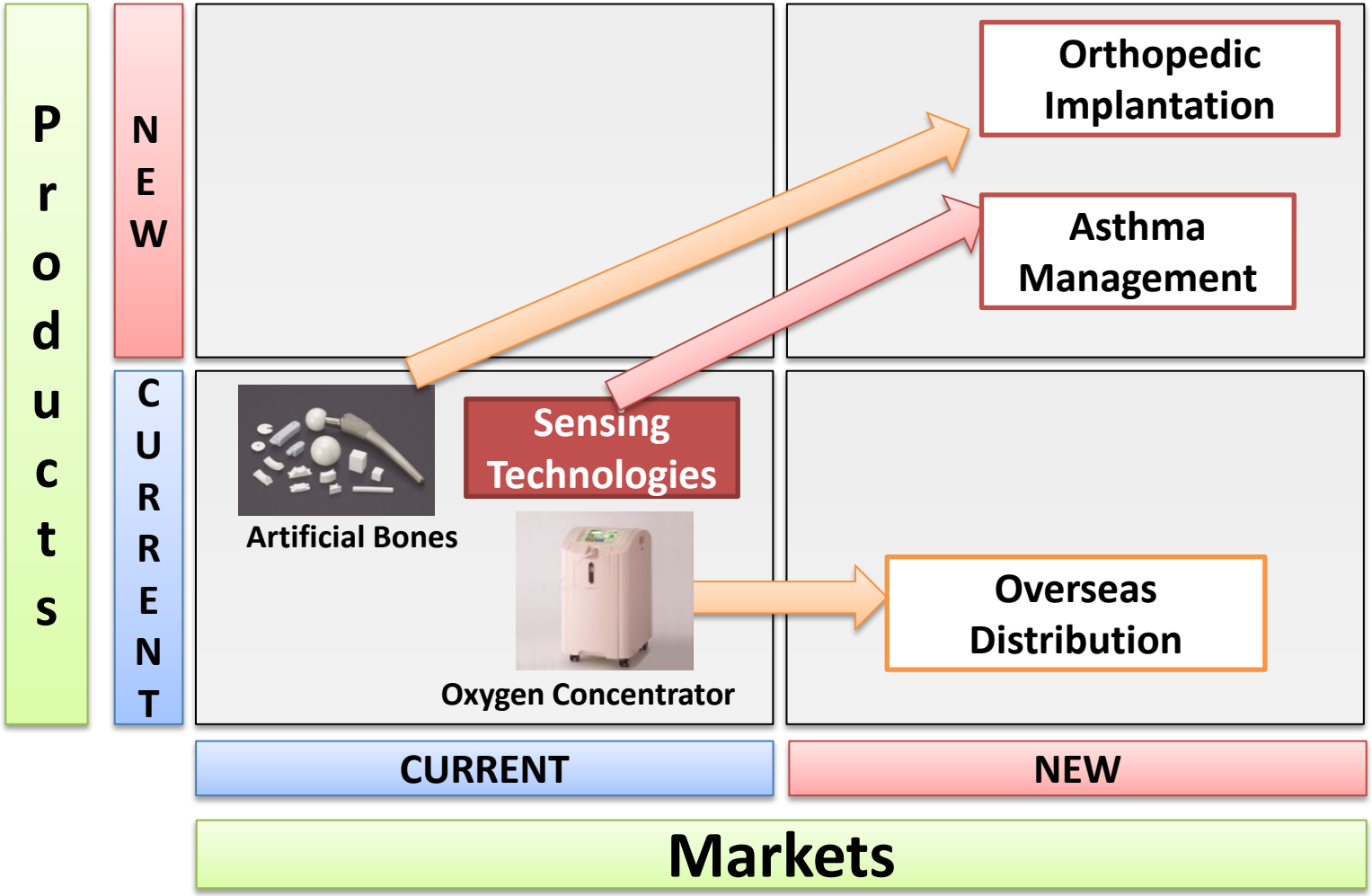
Establish a solid status as a fuel cell stack manufacturer

Strategy	Action plans
Entering into Domestic use SOFC and launch small industrial SOFC business	• Develop small and high power plate stack SOFC and entering into domestic stationary use and small industrial SOFC system ➡ Launch by 2020 ➡ Gain 30% shares in the field of domestic use SOFC by 2025
Promoting dispersed power SOFC and entering into Power Plant SOFC	• Entering into power plant market collaborating with MHPS by cylinder stack SOFC ➡ Entering into industrial SOFC market by 2017, and make profits in several years ➡ Entering into power plant market in the near future

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2-2. Creating New Businesses –Medical field

Entering into new markets with current products and launching new products



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Developing its business field

Strategy	Action plans
Developing implant business	• Entering into orthopedic implant business • Entering into overseas business
Adding values and promoting oxygen concentrator	• Leveraging added values by offering working data of oxygen concentrator to doctors • Considering overseas productions and entering into the US markets
Developing sensing unit for asthma	• Developing NO detection sensing unit for asthma diagnosing instrument of Spirometrix, the US venture company

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Finding seeds and raising businesses



New Products Utilizing Sensing Technologies

New Products Utilizing Waste heat

New Products Utilizing Ceramics Features



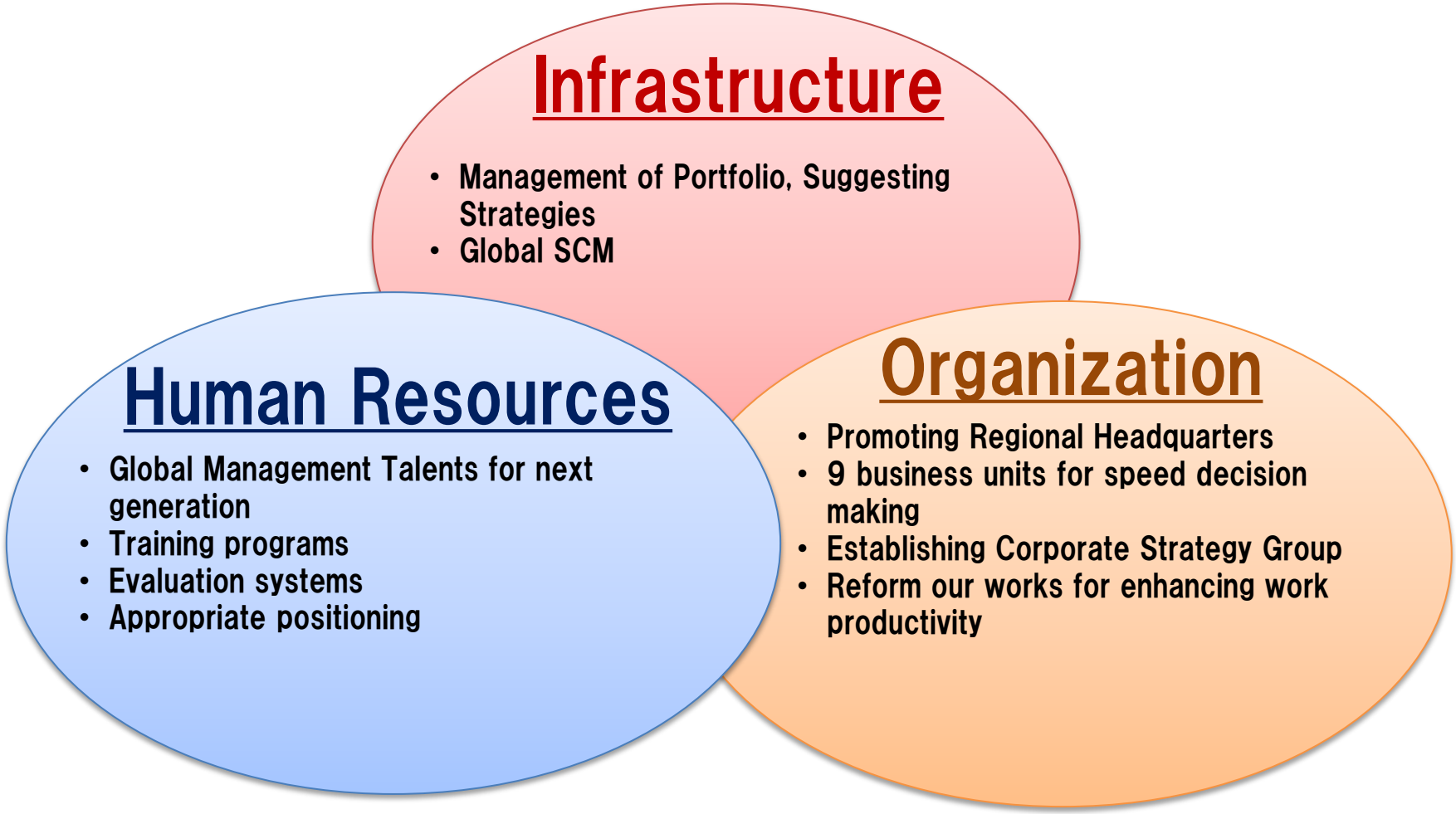
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Business Strategies

3. Establishing Strong Business Infrastructures

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Strengthening business infrastructures for organization and human resources



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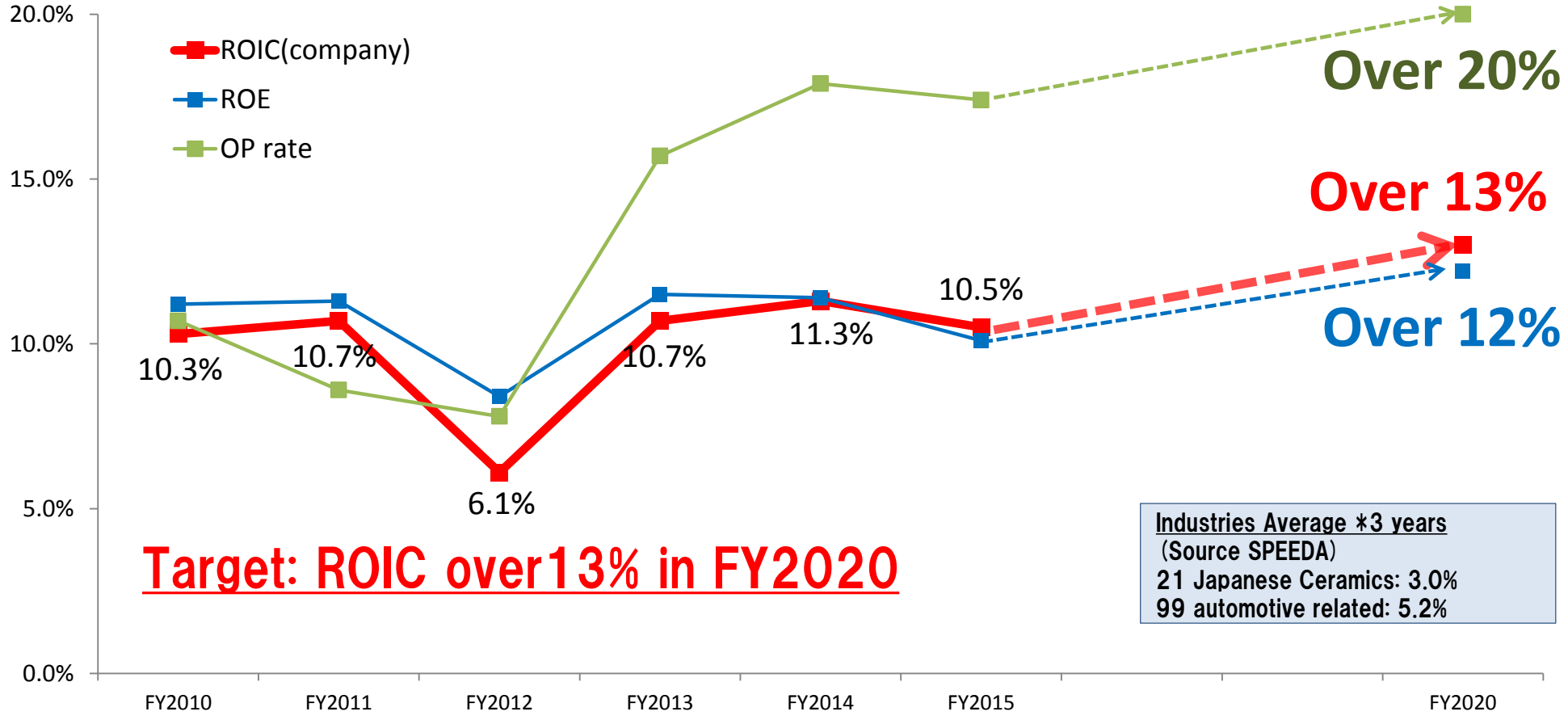
3. Establishing Strong Business Infrastructures

MEASURES

•Finance	•Introducing ROIC and utilizing as a management indicator •Establishing managerial accounting system for decision making
•Purchasing, SCM	•Establishing appropriate SCM scheme from purchasing, production and sales
•IT	•Appropriate IT scheme to promote business enlargement and work reform
•Technology Development	•Accelerating business launch by strengthening marketing •Broadening research themes by open innovation
•Corporate Planning	•Visualization of responsibilities and authorities and management basis •Risk Management
•Human resources	• Developing next global top management talent • Appropriate evaluation system and positioning system • Developing professionals for each functions
•Work reform	•Shifting to high-valued works to eliminate 20% indirect cost

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3. Establishing Strong Business Infrastructures -Introducing ROIC



Target: ROIC over13% in FY2020

Industries Average ＊3 years
(Source SPEEDA)
21 Japanese Ceramics: 3.0%
99 automotive related: 5.2%

ROIC	10.3%	10.7%	6.1%	10.7%	11.3%	10.5%	・・・・・・・・	・・・・・・・・	Over 13%
ROE	11.2%	11.3%	8.4%	11.5%	11.4%	10.1%	・・・・・・・・	・・・・・・・・	Over 12%
OP rate	10.7%	8.6%	7.8%	15.7%	17.9%	17.4%	・・・・・・・・	・・・・・・・・	Over 20%

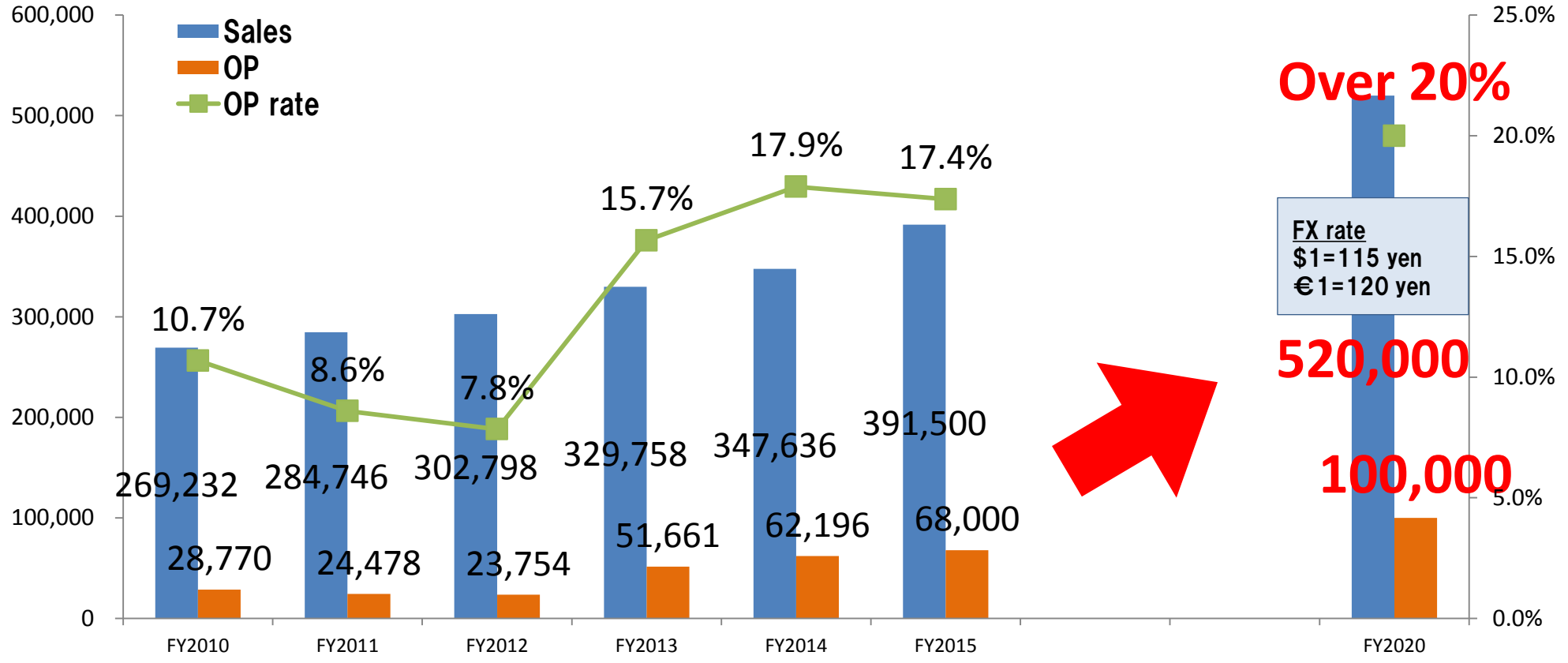
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Revenues
-Securing stable revenues-

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To realize our sales and OP target in FY2020

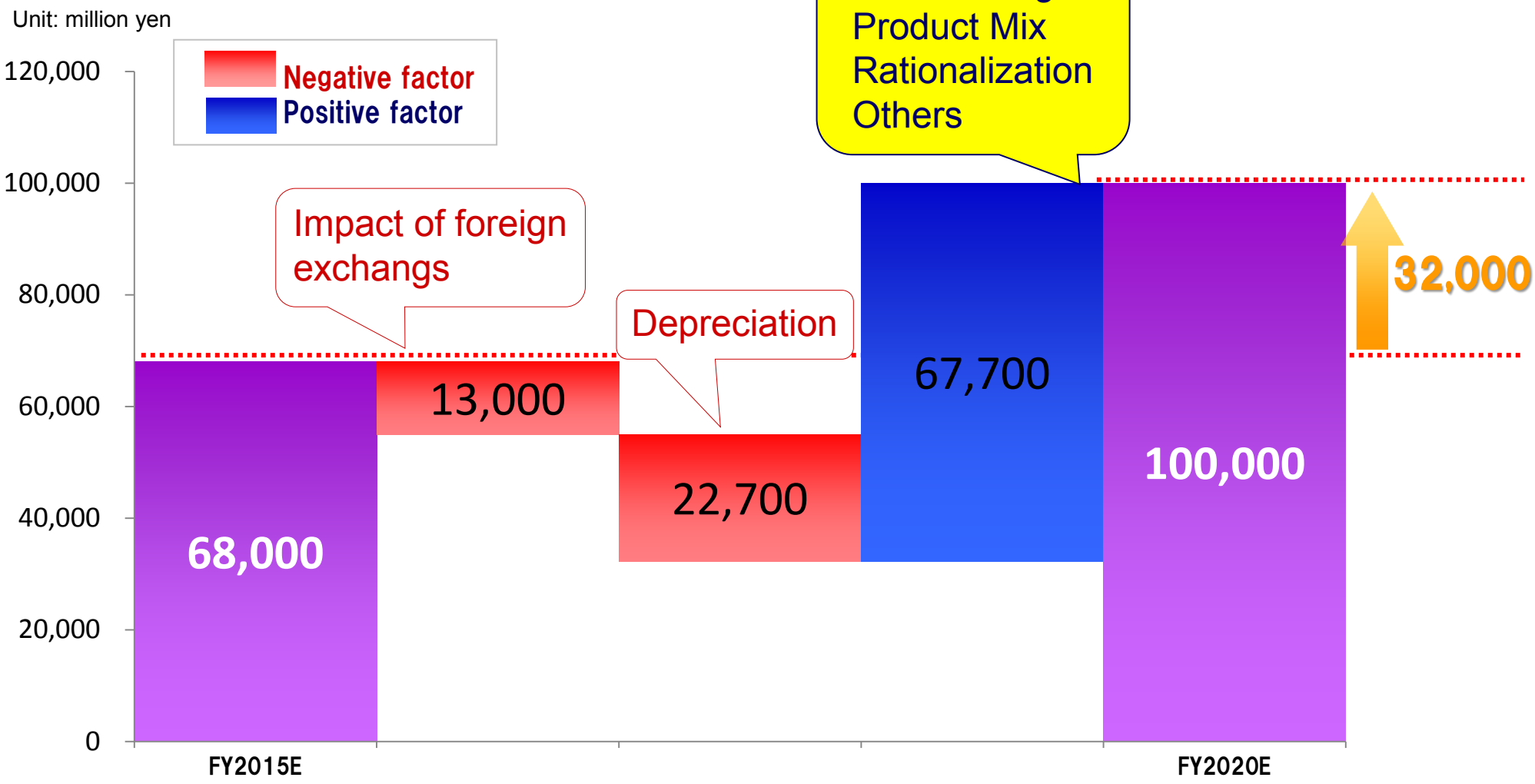
Unit: million yen



Sales	269,232	284,746	302,798	329,758	347,636	391,500	・・・・・・	・・・・・・	520,000
OP	28,770	244,478	23,754	51,661	62,196	68,000	・・・・・・	・・・・・・	100,000
OP rate	10.7%	8.6%	7.8%	15.7%	17.9%	17.4%	・・・・・・	・・・・・・	Over 20%

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Variance Analysis on Operating Income



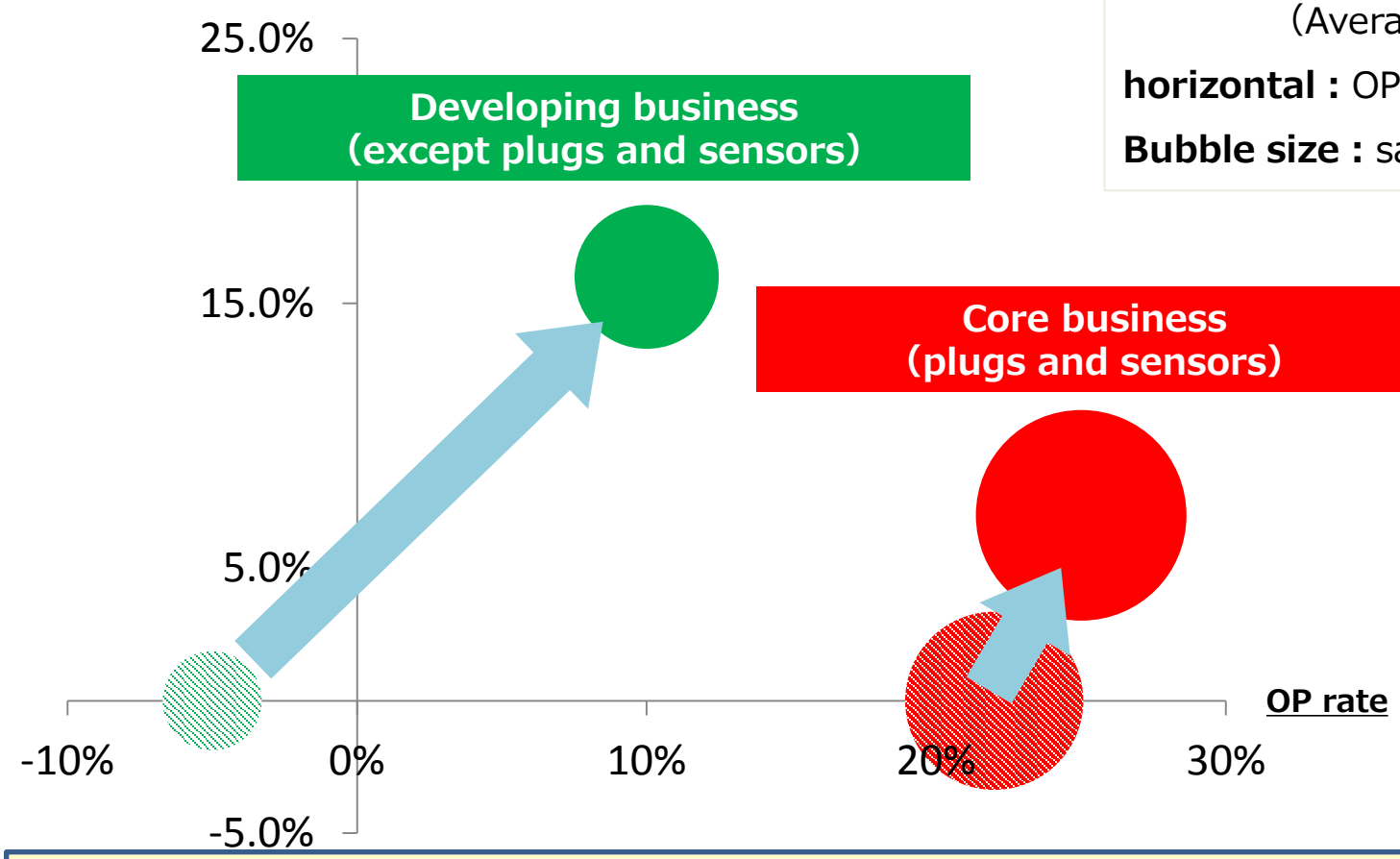
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Future business portfolio

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Business Portfolio

Sales and growth rate
Average of FY2015 to FY2020



vertical : sales and growth rate
(Average of FY2015 to FY2020)

horizontal : OP rate

Bubble size : sales amounts

- Rate of developing business to be 32% from 24% of FY2015
- Expect to have 30 billion yen sales in the field of new businesses in FY2020

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Financing Strategy

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Financing Strategy
-Estimated Cash Flows

Earning cash to be used for investment to grow from FY2016 to FY2020

CASH IN

Net Profit 280 billion yen
Depreciation 170 billion yen

450 billion yen

PAY OUT

CASH OUT

Working Capital ▲100 billion yen
Investment ▲250 billion yen
Dividend ▲100 billion yen

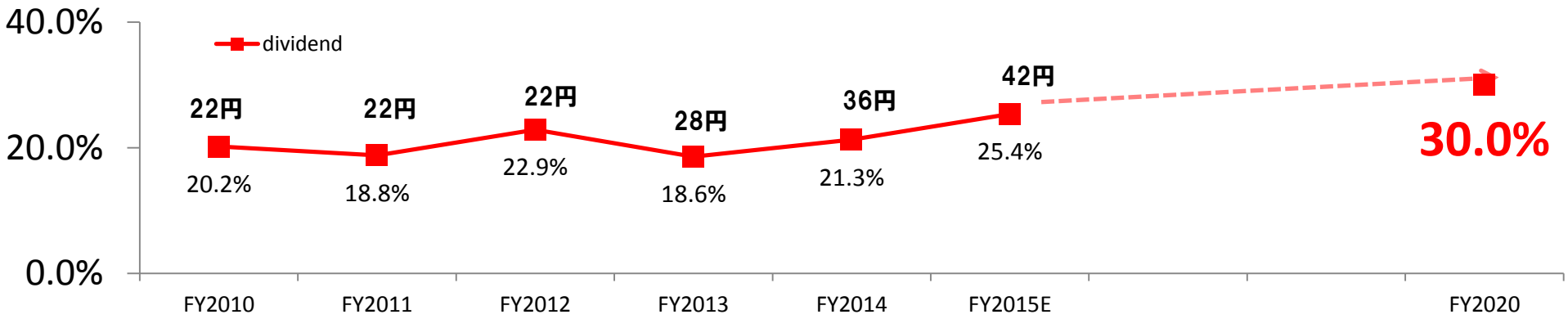
450 billion yen

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Financing Strategy
-Strengthening shareholders return

Current dividend policy
Stable return ＋ over 20 % dividend ratio

New dividend policy
Stable return＋over 30% dividend ratio＋buyback



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Estimated Indicators at a glance

Management Indicators

	FY2015E	FY2020E
Sales	391,500 million yen	520,000 million yen
OP	68,000 million yen	100,000 million yen
OP ratio	17.4%	Over 20%
ROIC	10.5%	Over 13%
Dividend	25.4%	30.0%

cf.

ROE		10.1%	Over 12%
net earnings per share		165.42 yen	300 yen
FX rate	$1	118 yen	115 yen
	€1	132 yen	120 yen

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For the 100th anniversary

● Overview of Long- term Management Plan



NGK SPARK PLUGS TECHNICAL CERAMICS
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80 years

IGNITE YOUR SPIRIT

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