

NSG

GROUP

**NSG Group
Medium-term Plan (MTP)
Update at FY17 Q2**

28 October 2016

Nippon Sheet Glass Co., Ltd.

Agenda

- Key Message
- MTP Progress Assessment
- Key Measures to Achieve MTP Targets
- Summary

Key Message

- The Group has continuously improved its operating profit since the start of the MTP
- However, an additional two years to the original MTP period (FY15-FY18) is needed to achieve the MTP financial targets (ROS: 8%*; Net debt/EBITDA: 3x) due to:
 - Significant changes in the business environment of growth drivers, especially in Display and South America
 - Disparity among the regions in the speed of profitability improvement
- The original MTP financial targets remain unchanged; the Group will designate the three years from FY18 to FY20 as MTP Phase 2 to execute measures to achieve the targets
- During MTP Phase 2, the Group will drive the “VA No.1 Strategy”, “Establishment of Growth Drivers”, “Business Culture Innovation” and “Enhancement of Global Management” to achieve the MTP targets as well as to continue to improve its financial position and accelerate growth

* ROS: return on sales (Operating Profit before amortization and exceptionals)

Long-term Strategic Vision

Long-term Strategic Vision:

Transform into “VA Glass Company”

Strategic Intent

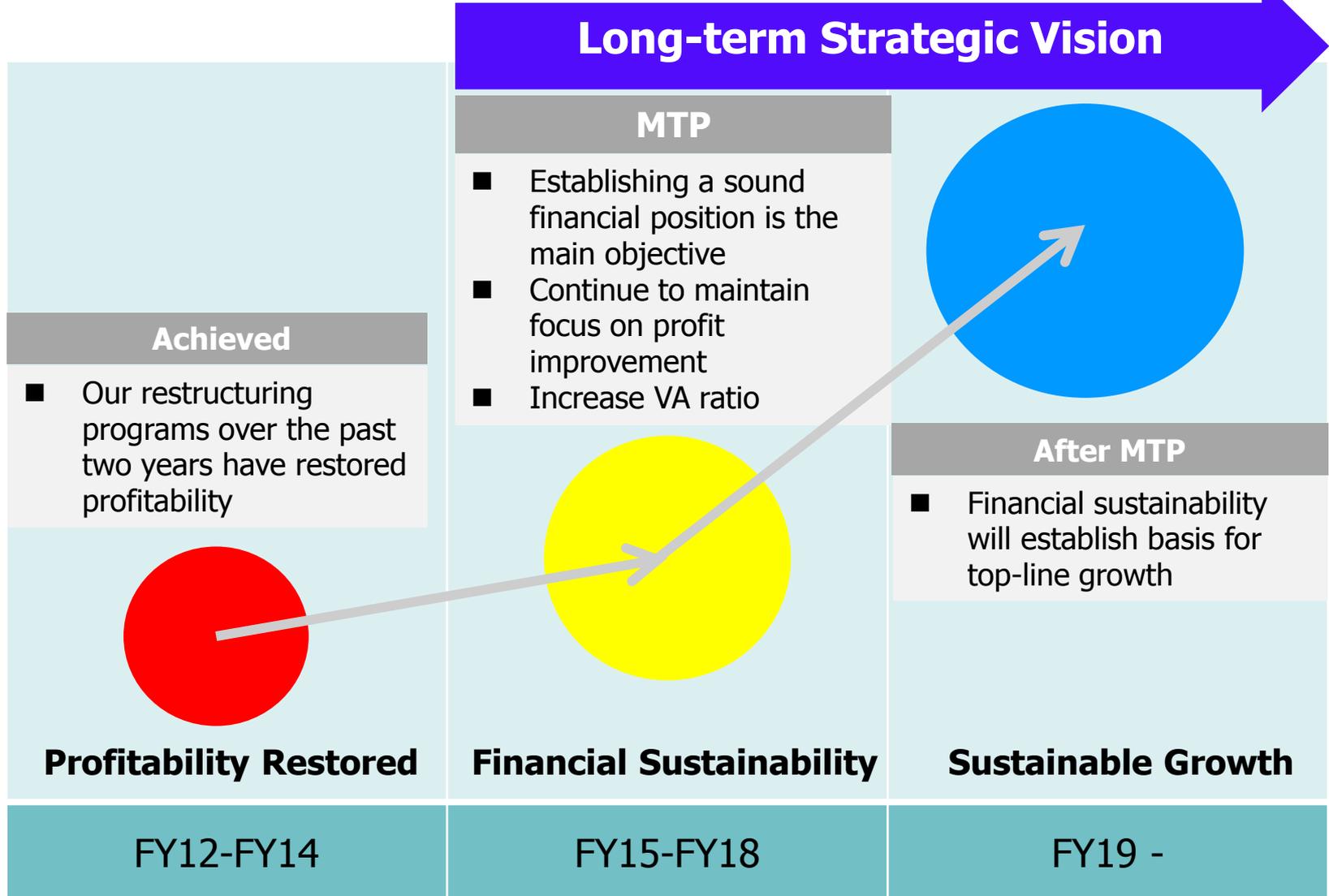
- Transform the whole Group structure into “VA-ready” while increasing the VA ratio in the Group’s sales

Objectives

- Consolidate our trusted reputation as a glass specialist
- Work closely with customers worldwide to offer unique value through our products and services
- Transform business structure from a traditional model to a value-added model

* VA: Value-added

Positioning of MTP



MTP: Targets and Action Plan

- **Target**
 - **Achieve financial sustainability**
 - **Start transformation into VA Glass Company**

<Financial Target (FY18)>

 - Net debt / EBITDA: 3x
 - ROS: 8%*
 - **Action Plans to achieve targets**
 - Increase value-added product share
 - Maximize utilization of existing assets
 - **Approach**
 - **Architectural + Automotive: improve profitability**
 - **Technical Glass: grow with existing businesses and new products, focus on R&D**
- *Operating Profit before amortization and exceptionals

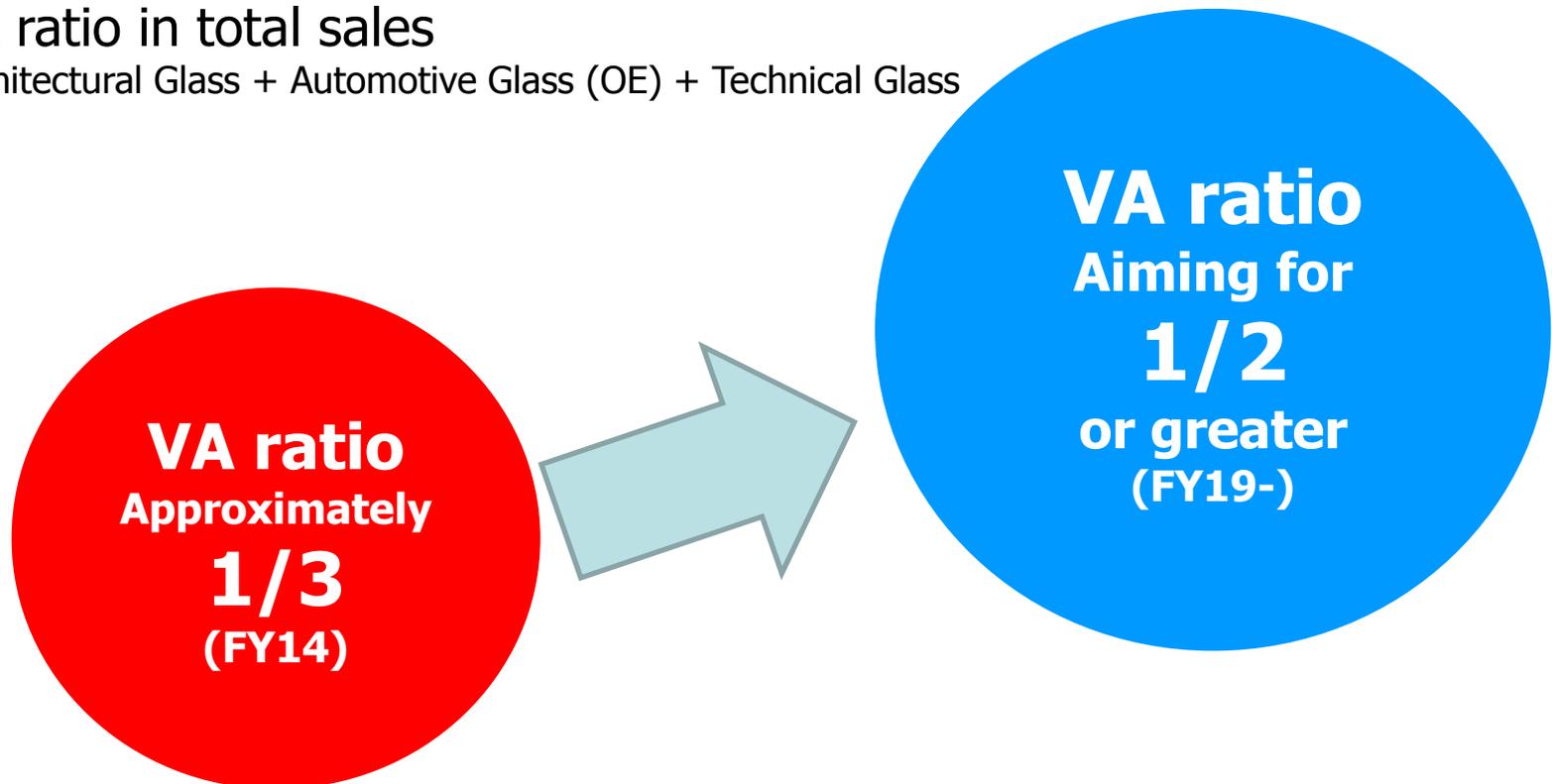
Establish financial sustainability and start transformation into VA Glass Company

Business Strategy to Achieve Targets

Accelerating VA shift

VA ratio in total sales

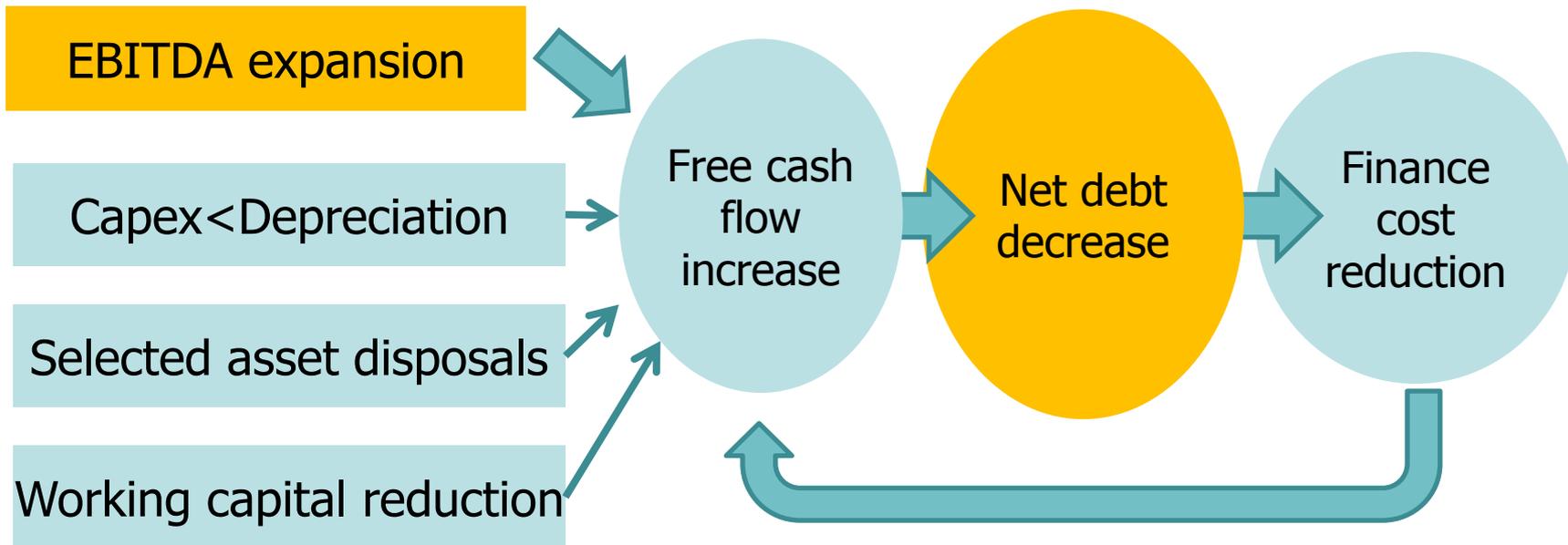
Architectural Glass + Automotive Glass (OE) + Technical Glass



Steady increase in VA ratio

Finance Strategy to Achieve Targets

Target Net debt/EBITDA: 3x



Positive spiral leads to achievement of targets

Improve financial position

MTP Progress Assessment: External Factors

Upsides

- Strong architectural glass market in North America
- Demand upturn for automotive OE glass in Europe and North America
- Significant energy cost reduction

Downsides

- Intensified competition in Display market
- Decline or slowdown in emerging markets such as South America and China
- Slower market recovery for architectural glass in Europe, while a clear sign of improvement in prices and volume seen in 2016
- Negative translational impact of the Japanese yen appreciation

Despite some upsides, significant downsides

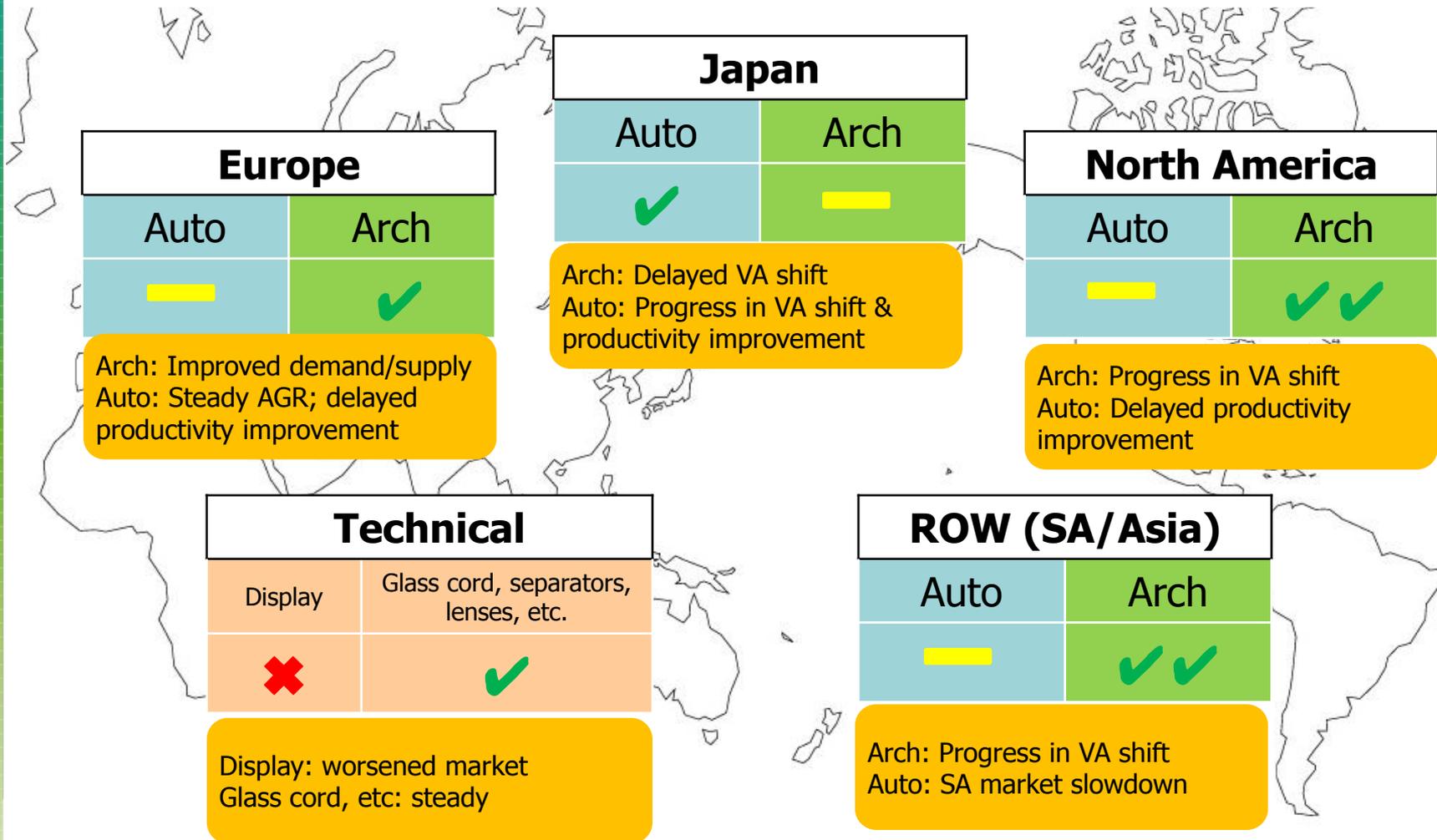
MTP Progress Assessment: Internal Factors

Achievements	• Steady increase in VA ratio
	• Improved capacity utilization
	• Working capital reduction and capital expenditure management
	• Downsizing of and exit from unprofitable business
Challenges	• Regional differences in profitability improvement rate
	• Reduction of finance costs
	• Balance sheet improvement

VA shift progressing on plan but regional difference in profitability and balance sheet challenges remain

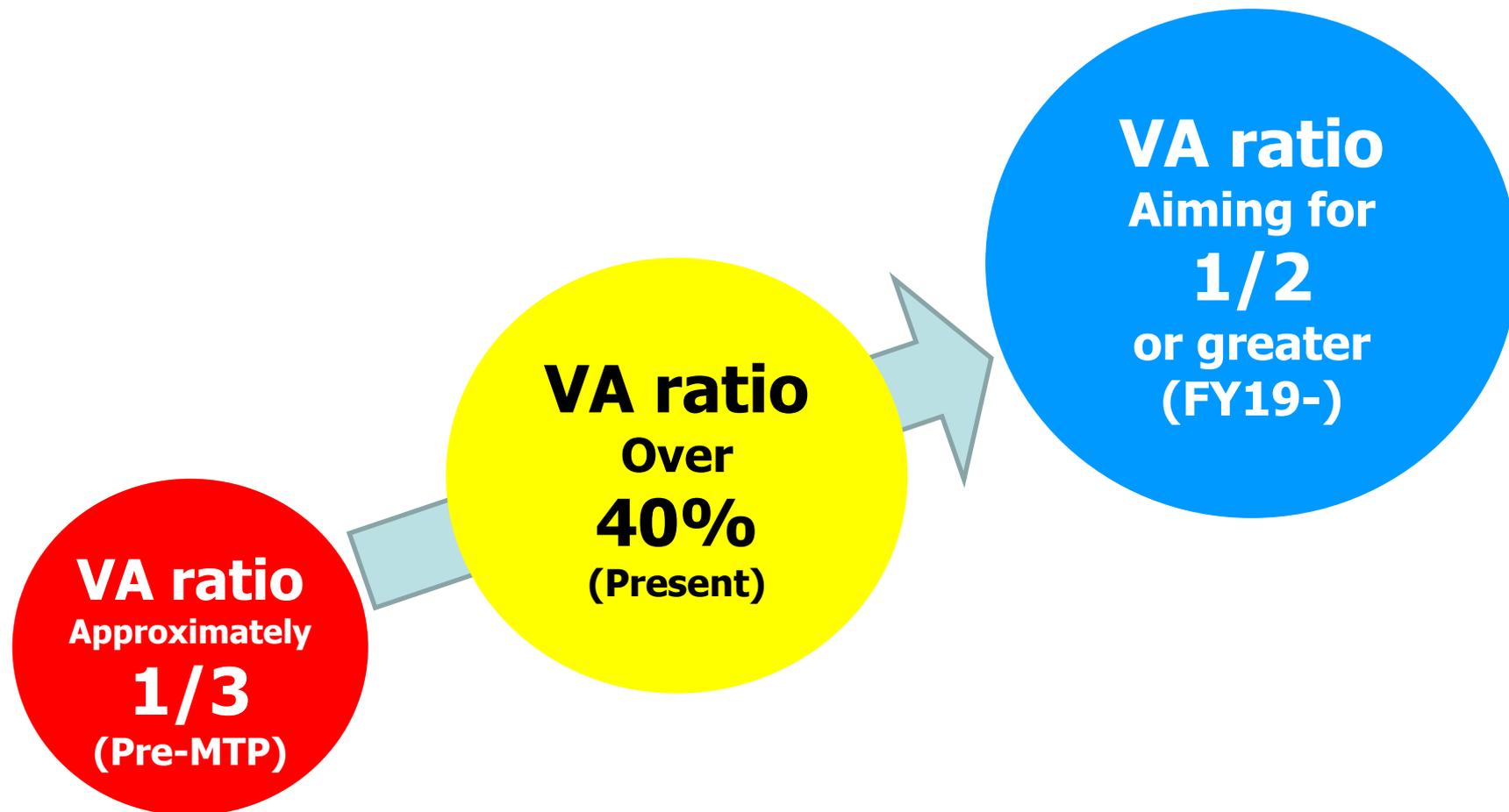
MTP Progress Assessment:

Achievements and Challenges by Region & Business



MTP actions moving forward despite challenges in regions

MTP Progress Assessment: VA Shift



VA ratio increasing steadily

MTP Progress Assessment: KPIs (1)

[KPI trend]

Progress made with all KPIs

	FY14 (pre-MTP)	FY17 Forecast	MTP Assumptions
ROS	3.7%	Approx. 6%	8.0% or more
Net debt/EBITDA	7x	>5x	3x
VA ratio	1/3	40%+	1/2

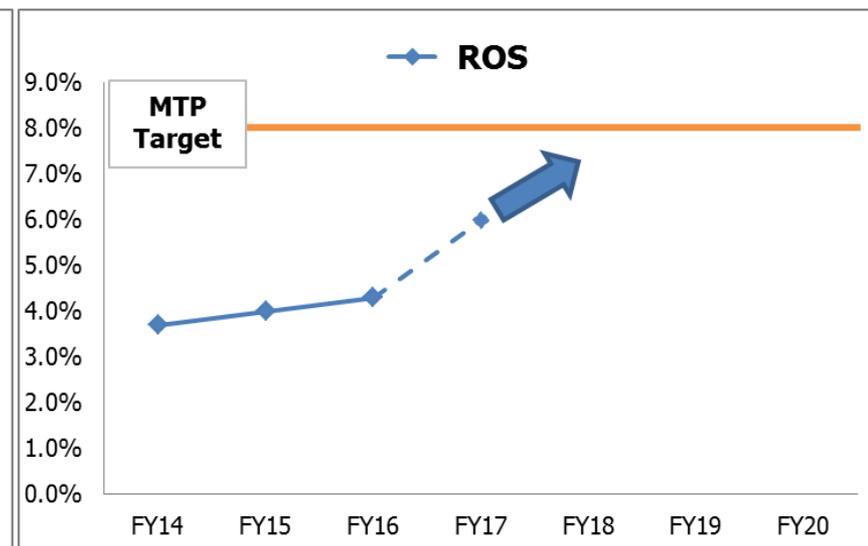
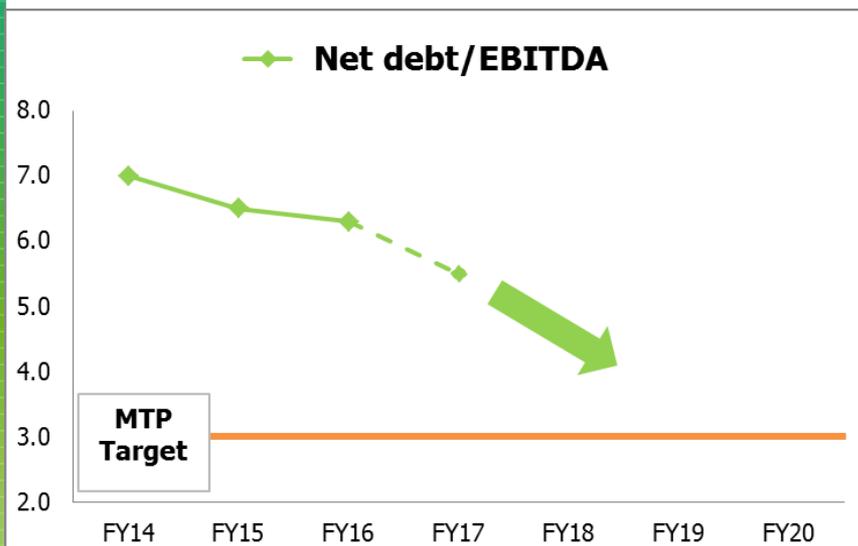
[Return on Sales (ROS) by business]

Mixed progress among businesses

	FY14 Q2 Actual	FY17 Q2 Actual	Progress (ROS: 8% or more)
Architectural Glass	3.7%	10.5%	↑ ↑
Automotive Glass	3.0%	3.5%	↗
Technical Glass	10.0%	2.1%	↓

Despite mixed progress among businesses, progress being made towards targets

MTP Progress Assessment: KPIs (2)



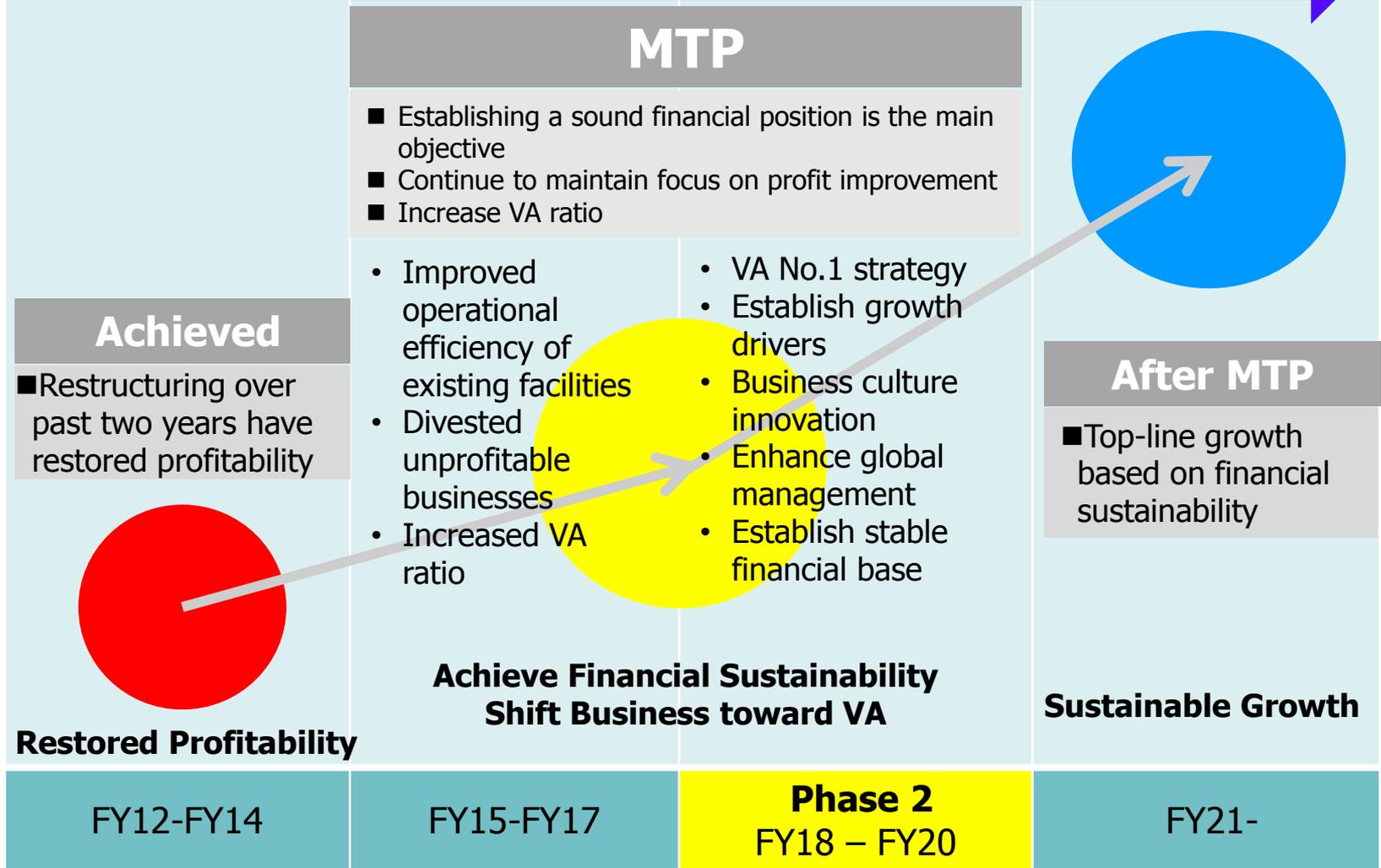
Improvement since the MTP launch but two additional years needed for target delivery

MTP Progress Assessment: Summary

- Continuously improved operating profit
- Capacity utilization improved as planned
- The VA ratio increasing steadily
- Uneven results between regions and businesses
- Priority: Shift into a business structure to enable stable generation of profits

Repositioning of MTP

Long-term Strategic Vision



MTP Phase 2: Basic Strategy

Positioning of MTP Phase 2

- MTP's main objectives – achieving financial sustainability and developing the Group further toward VA Glass Company – remain unchanged, as the basic conditions for achieving the Long-term Strategic Vision of “Transformation into VA Glass Company”
- In light of the MTP progress and changes in business environment, the Group will take more focused approach and proactive measures to ensure the achievement of the MTP financial targets

Basic Policy

- Accelerate and evolve the VA strategy to build a robust profit base for sustainable growth
- Review each work process to develop a leaner business structure

Financial Targets (unchanged): to be achieved in FY20

- ROS: 8% or above
- Net debt / EBITDA: 3x

MTP Phase 2: Key Measures (1)

1. Drive VA No.1 Strategy

- Focus resources on VA shift in the areas with “high growth potential” and “NSG’s core strength” to aim for a leading market position
- Build stronger relationship with customers and speed up actions while considering strategic alliances

MTP Phase 2: Drive VA No.1 Strategy

Technical:

Become No.1 or “only one” in global niche areas with NSG’s core strength



Architectural & Automotive:

Capture expanding customer needs, respond with proprietary technology

MTP Phase 2: Key Measures (2)

2. Establish Growth Drivers

Accelerate generation of new profitable growth with focus & selection

Architectural: Realize high VA in energy saving/generation, health/hygiene and design/visibility

- Solar glass, coated products SPACIA®



Automotive: Deliver new values in automated driving & connected cars, UV/IR block and light weight

- Complex shape, camera/sensor ready light weight, HUD, heat wave reflection wired HWS, anti-fog, glass antennas



Technical: Generate new businesses in advanced thin glass, communication devices, high-strength glass cord and super glass paper for separator



Cover glass



Communication devices



Glass cord



Battery separators

MTP Phase 2: Key Measures (3)

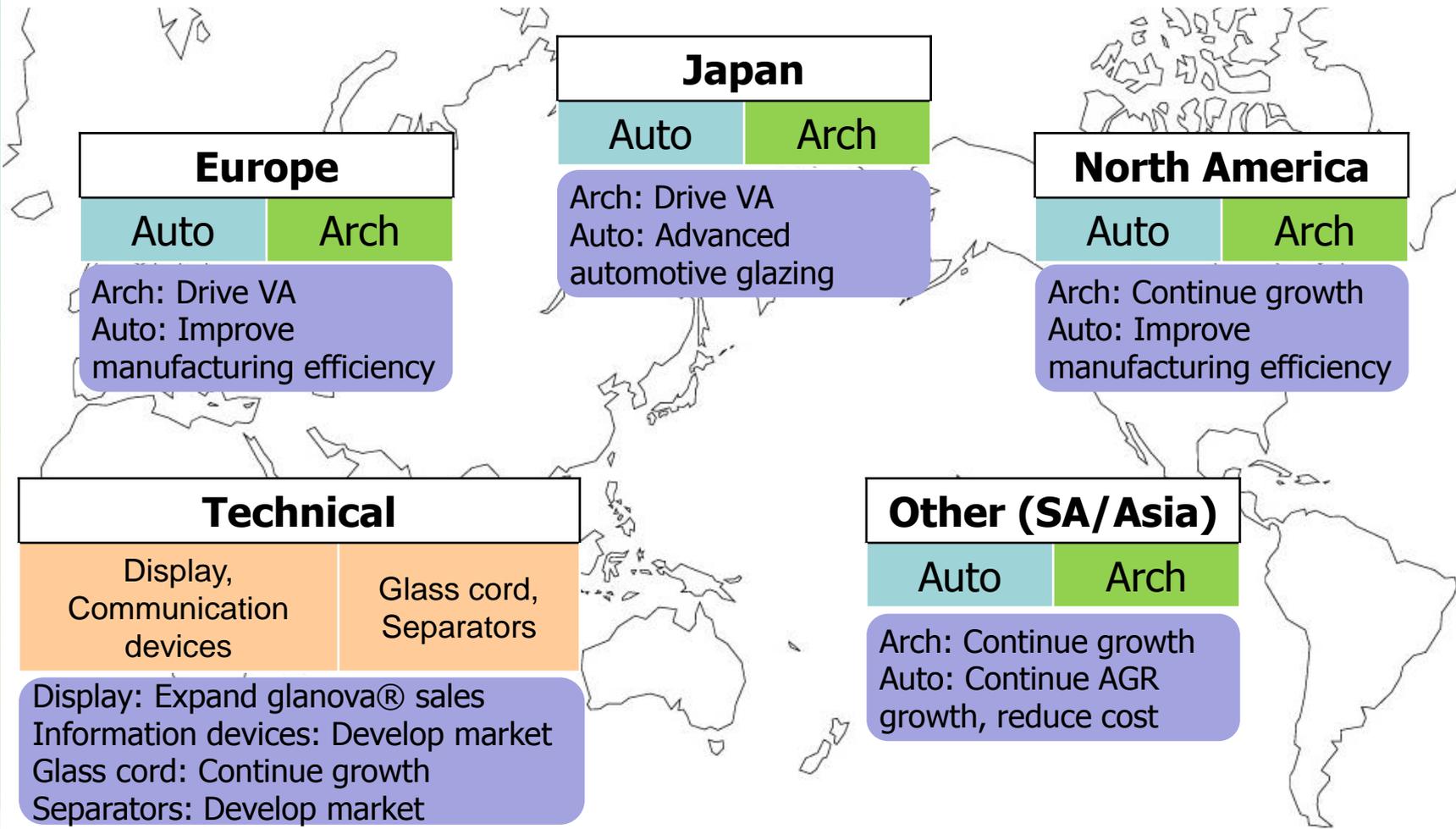
3. Business Culture Innovation

- Continue to optimize each work process towards a leaner business structure
 - Enhance “*monozukuri*” – manufacturing excellence
 - Optimize global R&D structure based on customer viewpoints
 - Strengthen customer-oriented marketing

4. Enhance Global Management

- Advance global management to achieve the Group’s optimization
 - Drive talent development, promote employee diversity
 - Enhance faster decision-making with flexible organizational management
 - Continue to reduce cost across the Group

MTP Phase 2: Enhance Business in Regions



Keep positive momentum in well-performing regions and businesses, establish and expand new growth drivers

Summary

- An additional two years to the original MTP period is needed to achieve the MTP financial targets
- The original MTP financial targets remain unchanged; the Group will designate the three years from FY18 to FY20 as MTP Phase 2 to execute measures to achieve the targets
- During MTP Phase 2, the Group will drive the “VA No.1 Strategy,” “Establishment of Growth Drivers”, “Business Culture Innovation” and “Enhancement of Global Management”
- Drive for No.1 position in VA, including coated products and solar glass in Architectural, advanced automotive glazing in Automotive, and glanova®, glass cord and battery separators in Technical to achieve the MTP targets and continue to improve its financial position

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