

Machine Tool Business Operation

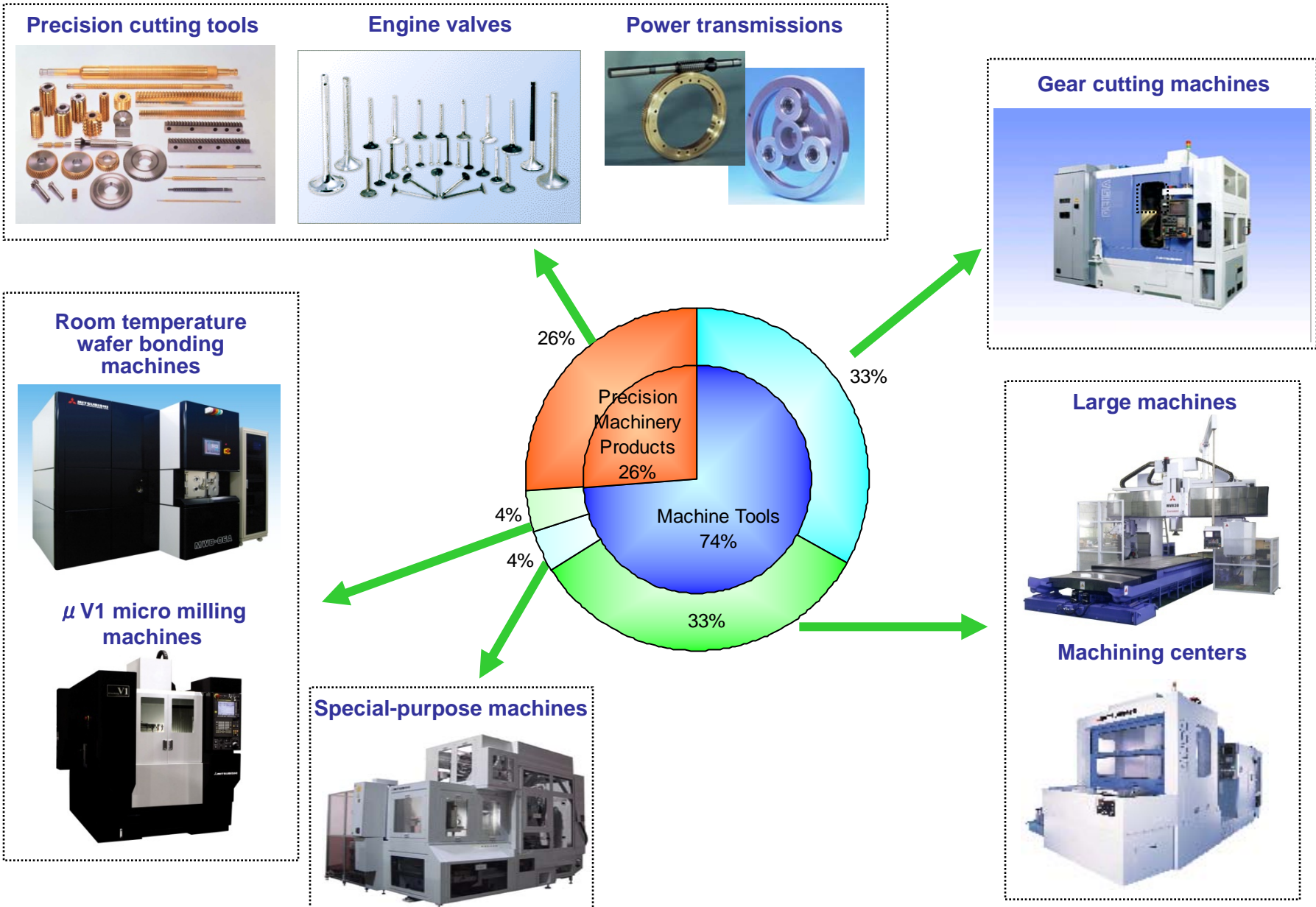
June 9, 2009

 **MITSUBISHI HEAVY INDUSTRIES, LTD.**

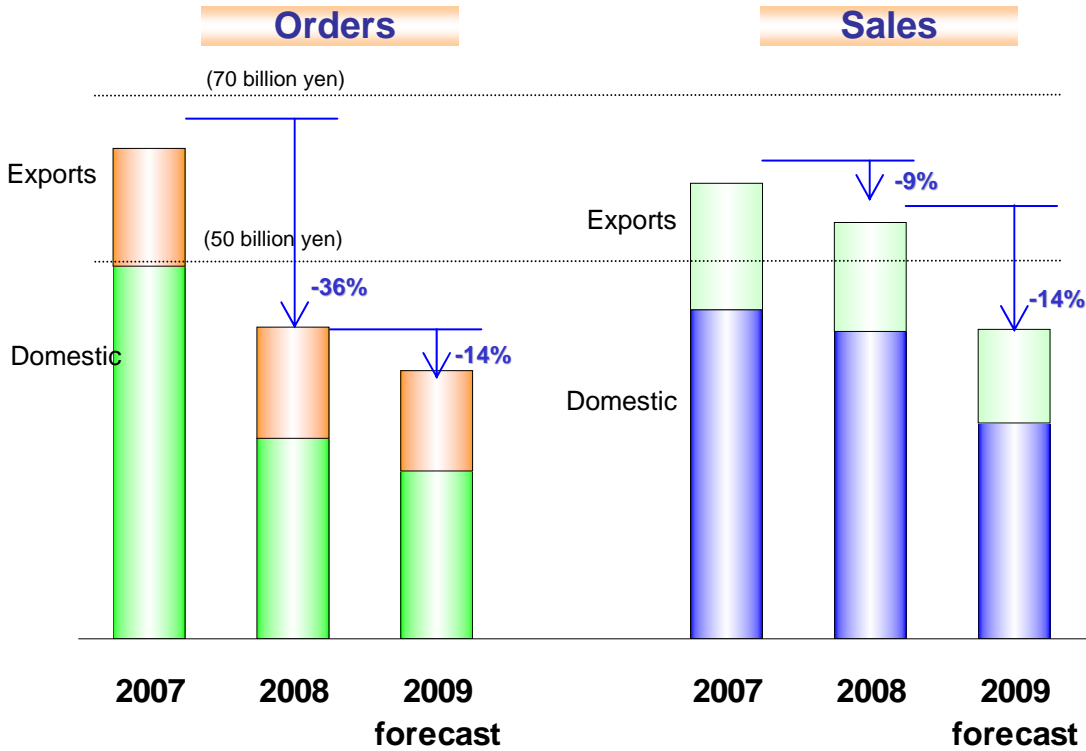
Akihiko Fujiwara
General Manager,
Machine Tool Division

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1. Machine Tool Division Product Portfolio



2. Summary of FY2008 and Forecast for FY2009



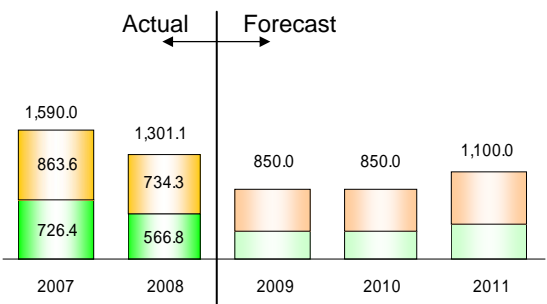
FY2008

- A sharp decline in orders after November 2008 like postponement and/or cancellation due to a drastic market down turn
- Same level of export as previous year by means of increase of manpower for sales in overseas and proactive support from Japan

FY2009

- Plans to enhance product appeal through expanded line-up in order to secure some precious and quality customers amidst continuing slow market conditions
- Major focus on potential markets like Environment and energy and Hybrid-related areas
- Maintain export at same level as FY2008 by stepping up sales promotion primarily in China and India where we can anticipate infrastructure-related demand

JMTBA Demand Forecast (Billion yen)

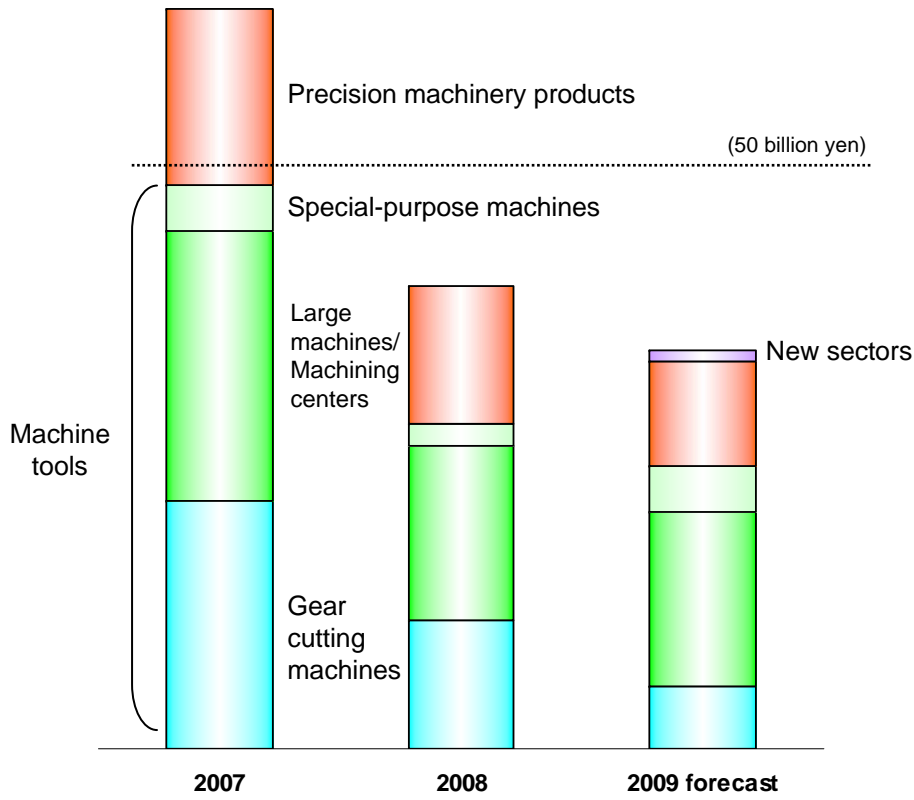


Japan Machine Tool Builders' Association (JMTBA) Forecast

- Demand expected to slip to 850 billion yen in FY2009 and FY2010, down 35% compared to FY 2008 (40% decline in domestic demand, 30% decline in export demand)
- Demand expected to increase to 1.1 trillion yen in FY2011, up 30%

3. Machine Tool Business Summary

Breakdown of Orders



1. General

Machine tool orders during April remain at 25.2 billion yen (down 80% year on year)

2. Gear cutting machines

No prospect of recovery in orders in the near future due to ongoing production adjustments in Auto industry
Sales talks are gradually starting up in overseas countries
Inquiries from Environmental and Energy sectors are increasing in Japan as well

3. Large machines

Signs of recovery in Shipbuilding, Railways and Energy sectors
Active sales talks are coming after Beijing trade fair in April

4. Special-purpose machines

Orders in the domestic Auto sector is not expected for the time being, but can be from overseas customers
Increase in inquiries of large special-purpose machines from Construction equipments and the Energy sector

5. Precision machinery products

Orders in Auto sector remain sluggish (Main uses are Auto sector companies.)
Allocate major resources to Energy sector, in relation to Gear cutting tools

1. Cost reduction initiatives

- ❑ Step up and accelerate Innovative Activities in Manufacturing
- ❑ Relocate staffs within the division as well as MHI other divisions

2. Securing orders and sales

- ❑ Provide machining technology support for customers in order to generate demand
- ❑ Cater to a diverse range of in-house machining needs
- ❑ Focus on increasing export to potential markets

3. Increasing local presence

- ❑ Expanding global procurement through standardizing optional equipments based on MD (Modular Design)
- ❑ Increasing local procurement of peripheral equipments and transferring more roles to overseas subsidiaries

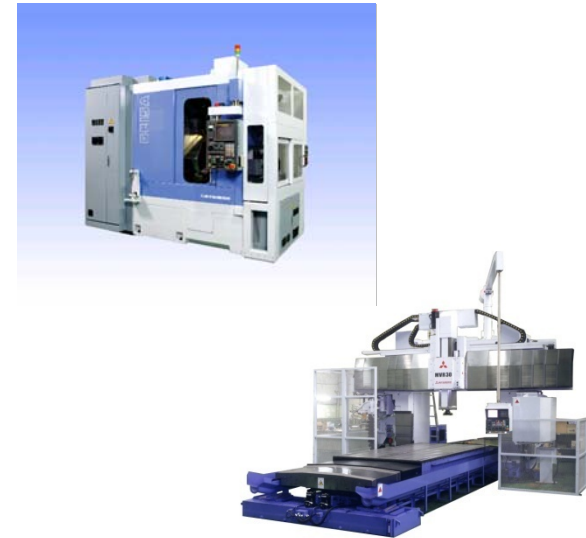
1. Cost reduction initiatives

Machine Tools

- Push ahead with **Innovative Activities in Manufacturing** and implement extensive cost reduction initiatives at all stages including design changes by the project team
- Adopt standard manufacturer products and increase the number of common components between models
- Focus on production efficiency through KIT* placement and establishment of JIT** processing for components
- Utilize under-used Gear cutting machines space and personnel as a part of assembly of Large machines
- Relocate personnel between products so as to promote multi-skilled worker development

Precision Machinery Products

- Review manufacturing process and production method so as to improve production efficiency
- Shorten lead time as a strategy to differentiate MHI from competitors
- Achieve the lowest manufacturing cost of Engine valves by the world's fastest production line
- Maximize overall efficiency based on optimum specialization with overseas plants



4. Emergency Measures for FY2009 (3)

2. Securing orders and sales

Generate demand by providing machining know-how to customers

Launch **machining technology seminar** for providing expert tuition in areas such as “basic machining techniques” with Large machines and “computer aided design (CAD)” in conjunction with **19 tool and cutting oil manufacturers** in April

MHI	Introduce machining technology for Wind power generation system components and Vacuum chamber for Solar panels
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The others	Introduce machining expertise (tool selection, drilling, etc.), types and special features of cutting oils
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Support customers to make it easier to do manufacturing through organized technical seminar involving companies in each special area



Actively generating demand by helping customers to cultivate markets

4. Emergency Measures for FY2009 (4)

2. Securing orders and sales

Cater to a diverse range of in-house machining needs



Support other divisions through introducing manufacturing methods and developing new type of machine tools

- ◆ Establish world-leading machining systems
- ◆ Provide total solutions combining tangible and intangible support

Focus on equipments for Power systems within MHI (FY2009)

Increasing sales to domestic and overseas Energy-related companies over medium term

4. Emergency Measures for FY2009 (5)

2. Securing orders and sales

Focus on increasing export to potential markets

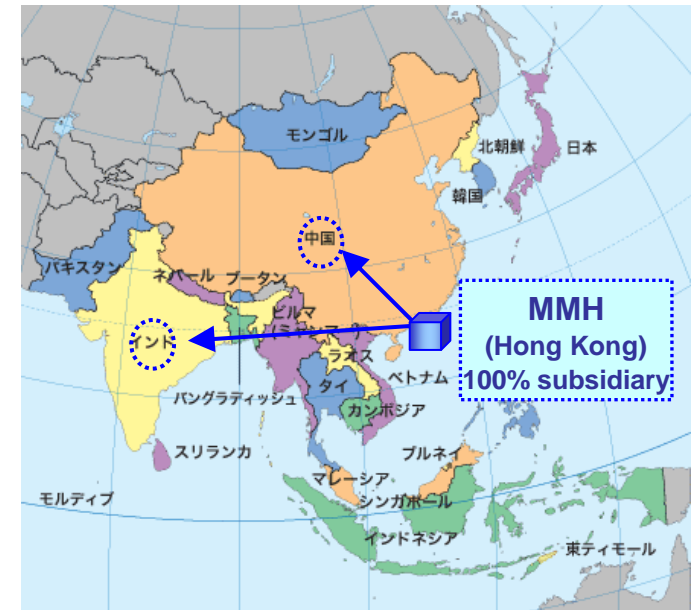
Sales talks are increasing on Infrastructure-related products in China and India



- Promoted HK base to Control center for Asian market (establish a set up not to miss any business opportunities)
- Dispatch another two members of division sales staff to China on a long term basis
- Send out design engineers to initiate sales talks so as to ensure faster, more effective responses, including special-purpose machines



Secure large orders for General machinery in China and Infrastructure-related products in India



3. Increasing local presence

Machine Tools

- Hold local component exhibitions to identify vendors (promising vendors already identified at the exhibitions held in Vietnam and India)
- Expand global procurement through standardization of optional equipments based on MD (Modular Design)
- Local tie-ups in relation to peripheral equipments for Gear cutting machines in India

Precision Machinery Products

- Promote integrated operations between overseas plants and Ritto Plant in Shiga prefecture, Japan
- Enhance price competitiveness within domestic market

Vision for the future

Expansion with an eye to potential local production



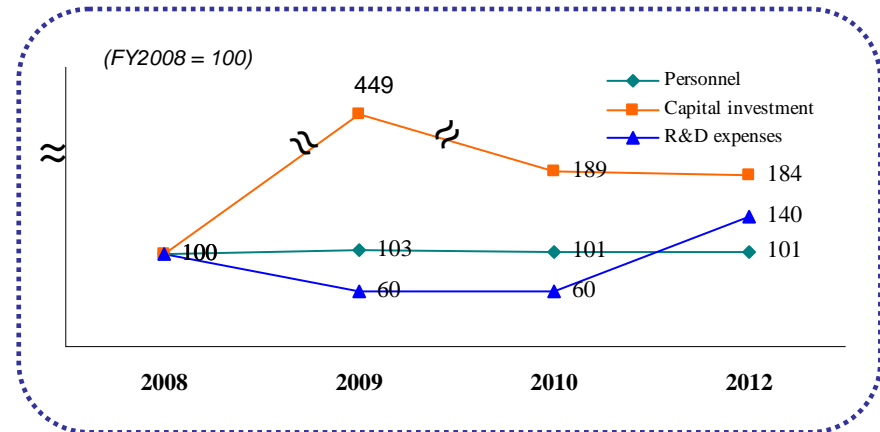
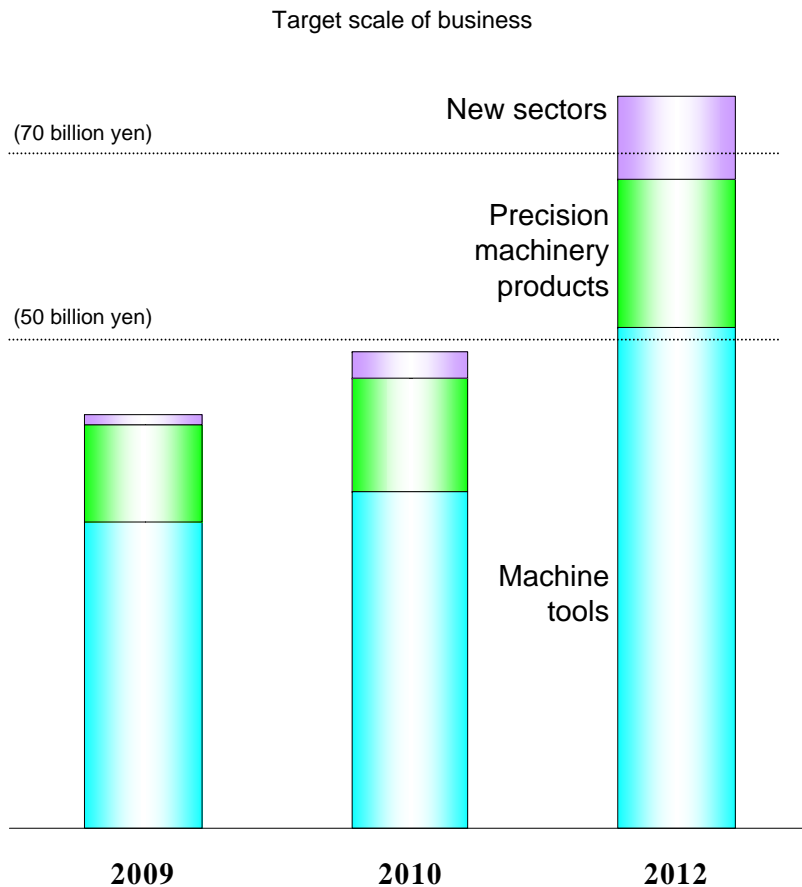
IMTEX2009 (India)
Exhibit gear cutting machine (GE20A) in January 09

Vision for the future

Expansion with an eye to potential horizontal specialization with local plants and subsidiaries

5. Medium- and Long-Term Initiatives (1)

◆ Establish a robust management framework capable of adapting to drastic changes in the environment



□ Continuous investment to target sectors for the future

- Personnel: Relocate personnel to prioritized sectors and maintain the overall number of personnel (human resources focused on overseas sales, services and new product development)
- Investment: Commercialize Gearbox business for Wind turbines
- R&D: Establish a line-up of large Infrastructure-related products

Machine Tools

Gear cutting machines

Priorities

- Reduce weighting towards Auto industry (especially major manufacturers)
- Cater to accelerated growth of Hybrid-car
- Measures corresponding to decline of the market due to reducing number of gears
- Step up capabilities in Energy and Infrastructure-related sectors



- Cater to growing demand for Hybrid technology and higher quality gears (complete line-up of gear grinding machines for internal and external gears)
- Launch modified products for job shops*
- Develop large Gear cutting machines for Construction equipments and Wind power generation systems (testing underway with an eye to launching before end of year)

* Job shop: Plants handling orders for high-mix, low-volume production

Large machines

Priorities

- Focus on in-house Power systems and Wind power generation products in response of growing demand in Energy sector
- Concentrate more on Special-purpose machines rather than primarily on standard models



- Build up expertise and expand products through responding to high level in-house needs
- Develop extra-large Horizontal boring machines for power systems
- Cultivate Portal machine markets in Europe

◆ Build up a solution business based on manufacturing expertise as a future source of revenue

5. Medium- and Long-Term Initiatives (3)

Precision Machinery Products

Precision cutting tools

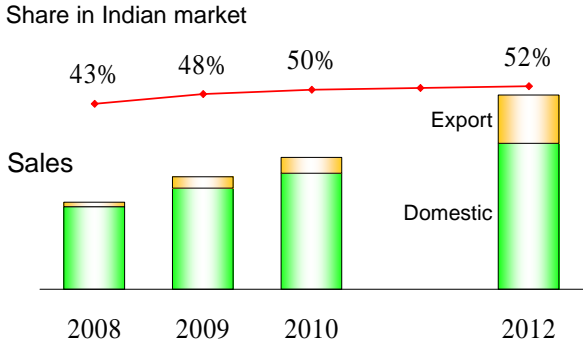
Priorities

- Reduce weighting towards auto industry
- Launch new products
- Step up integrated operations with Indian plant
- Enhance price competitiveness for exports



- Launch new tools for power systems
- Consolidate general products, including operations at Indian Plant, new product development and high-value added products under Ritto Plant
- **Penetrate world market and double sales** based on collaboration between Japanese and Indian Plant

Mitsubishi Heavy Industries India Precision Tools, Ltd. (MHI-IPT)



Ranipet Main Plant (Tamil Nadu)
New plant completed in August 2007 (3,500m²)
Total capacity: Same as Ritto Plant



Delhi Plant
Commenced operations in December 2007
Northern after-sales service center

5. Medium- and Long-Term Initiatives (4)

Precision Machinery Products

Engine valves

Priorities

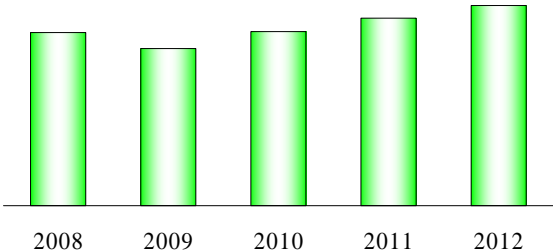
- Enhance price competitiveness
- Re-establish operation at Chinese Plant (entry to local car manufacturers)



- Increase productivity based on newly-introduced world's fastest production line
- Reinforce sales capabilities and increase productivity at Chinese plant
- **Solution-based sales harnessing in-house expertise** in relation to products for environmentally friendly high-performance engines

Shenyang Aerospace Xinguang Mitsubishi Heavy Industries Engine Valve Co., Ltd.

Sales



Shenyang Plant
Commenced operations in April 2006



Inside plant
Japanese standard production management

New sectors

Gearboxes for Wind turbines

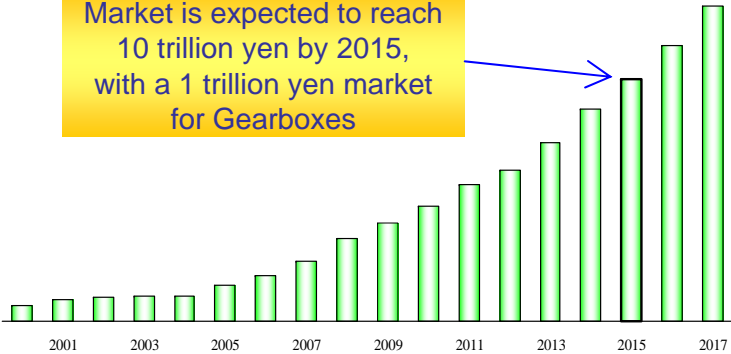
- Maintain manufacturing expertise accumulated through Power transmission and Gear cutting machine operations
- Match seeds to needs with growing in-house demand for Gearboxes



- Branch out into Gearboxes as well as manufacturing equipment (production scheduled to commence before end of FY2011)
- Develop modified low-cost, high-performance Gearboxes
- **Establish Gearboxes as a third core business after Machine tools and Precision machinery products**

Wind turbines: Market forecast and images

Market is expected to reach 10 trillion yen by 2015, with a 1 trillion yen market for Gearboxes



Source : BTM Consult ApS



Gearbox for Wind turbine





Our Technologies, Your Tomorrow

