

Machine Tool Business Operation

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5. Summary

1. Division Overview: Product Portfolio (FY2009 Net Sales)

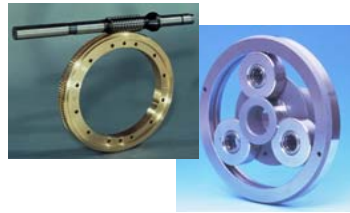
Precision cutting tools



Engine valves



Power transmissions



Gear cutting machines



Room temperature wafer bonding machines



μ V1 micro milling machines



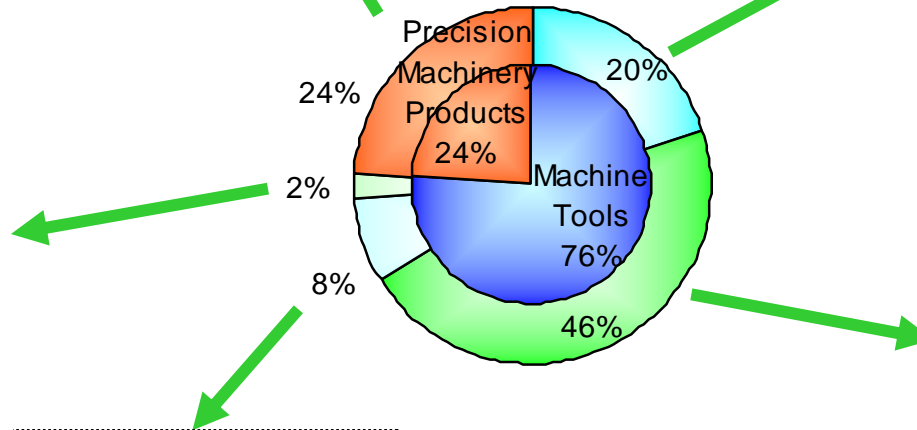
Special-purpose machines



Large machines



Machining centers



2. FY2009 Summary: State of Orders and Sales

Orders

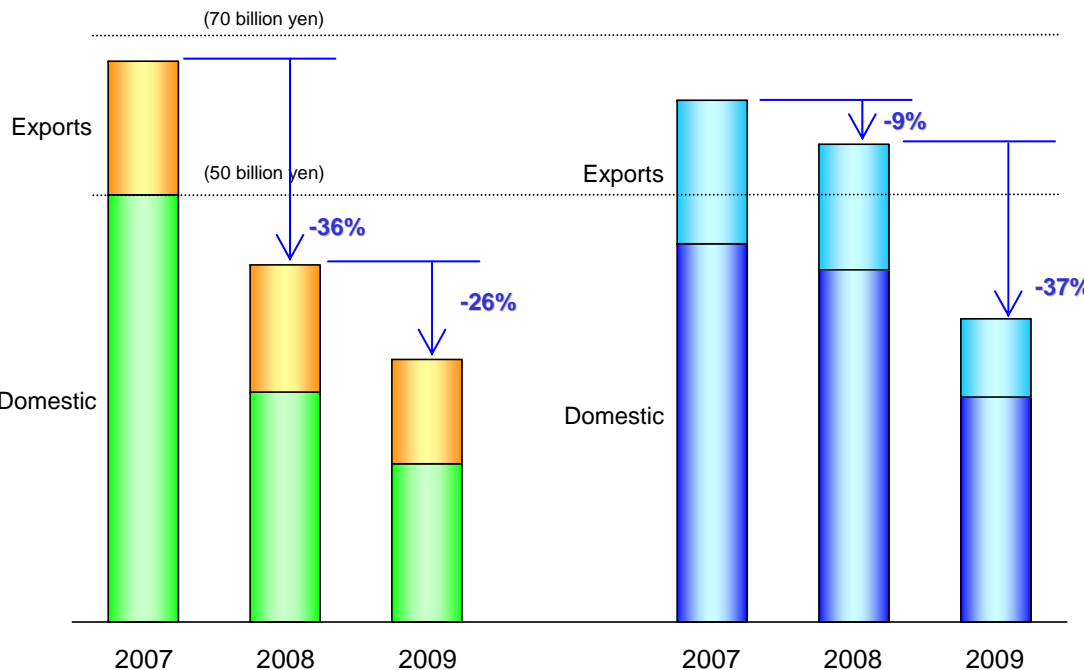
Sales

[Orders]

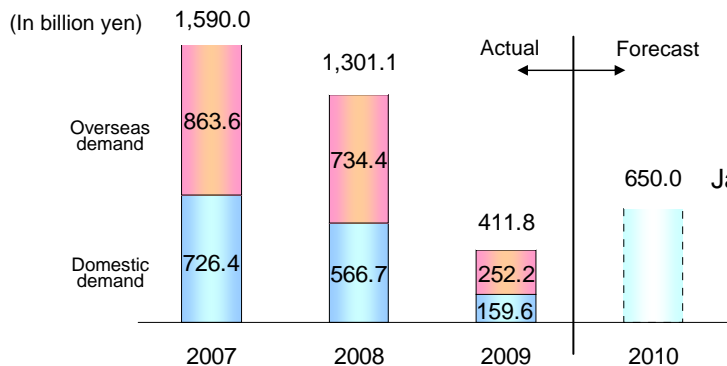
- Despite indications of recovery from December onwards, domestic capital expenditure remains weak.
- On the export front, construction machinery and infrastructure-related orders have improved and recovered, mainly for large machines.

[Sales]

- Gear cutting machines, which have short production deadlines, have been hit by a slump in automotive and related systems, with sales decreasing significantly.
- There was a backlog of orders from the previous year for large machines, which secured sales roughly equivalent to the previous year.
- The precision machinery products business largely comprised domestic automotive and related systems such as cutting tools and engine valves, with weak sales.



[JMTBA Demand Forecast]

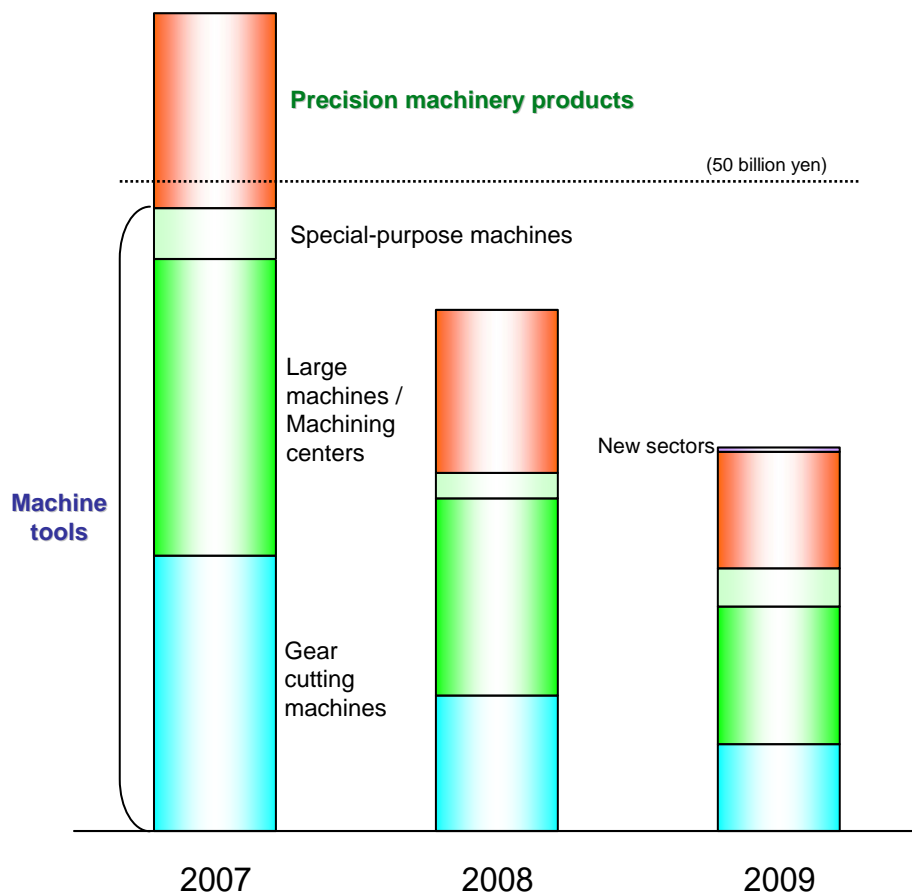


Japan Machine Tool Builders' Association (JMTBA) Forecast

- Demand expected recover to 650 billion yen in FY2010, up 58% from FY2009.

2. FY2009 Summary by Product

Breakdown of Orders



1. Gear Cutting Machines

Recovery was sought by expanding the product line-up with the world's first internal gear grinding machine for use in volume production and a large (over one meter in diameter) gear cutting machine, but orders declined due to restrained capital expenditure in the core automotive industry.

2. Large Machines

Despite a significant decline due to sluggish orders in domestic markets such as general machinery and electric products, with strong conditions in construction equipment and infrastructure-related equipment for emerging nations, a recovery was seen due to orders for large models.

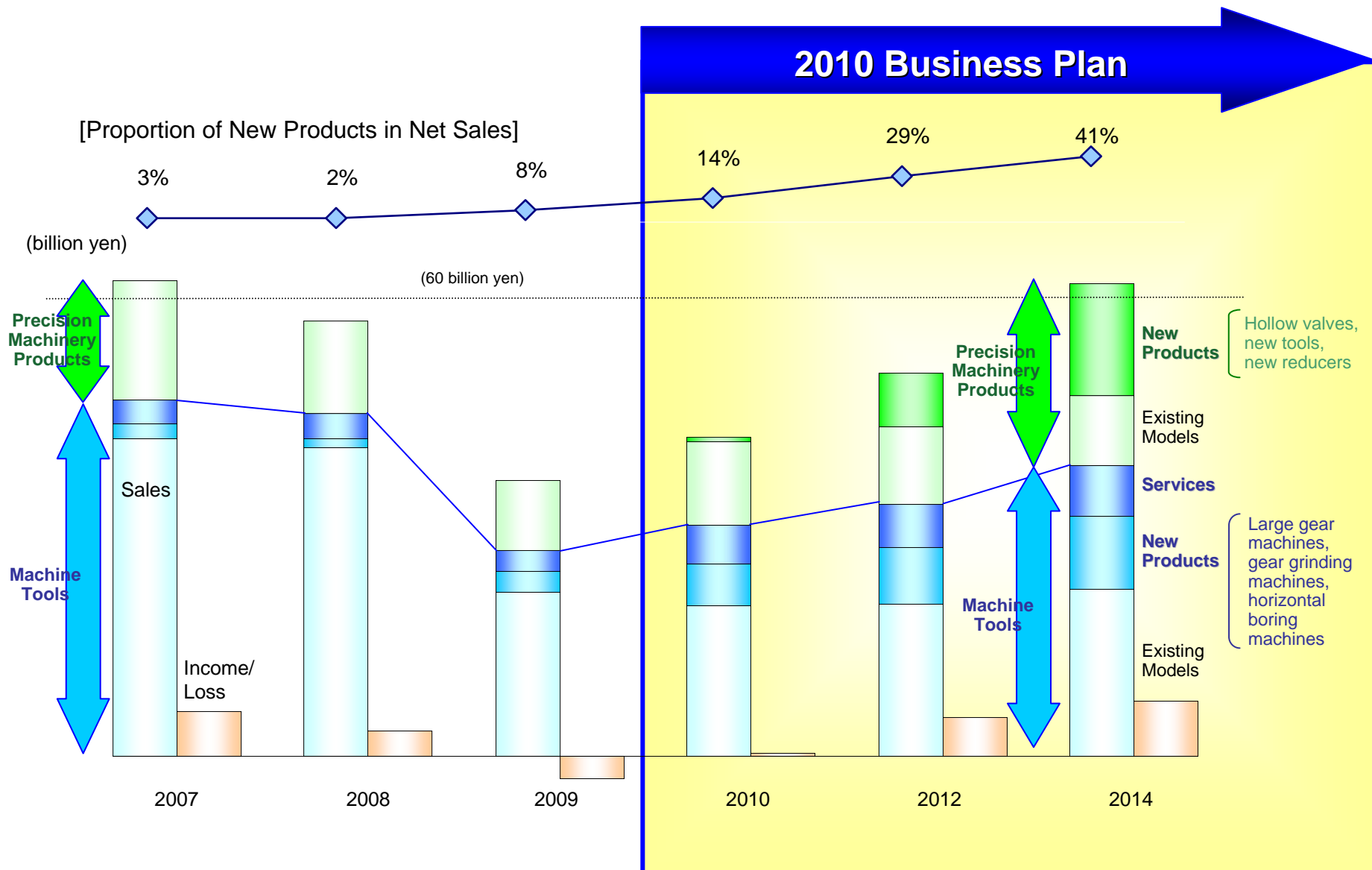
3. Special-purpose Machines

In addition to automotive equipment for overseas customers, orders for large machines were secured due to a shift to the energy sector.

4. Precision Machinery Products

Orders were weak in the automotive sector, which is the mainstay for both precision cutting tools and engine valves. Orders for power transmissions recovered due to strong performance in the semiconductor sector, but were sluggish overall.

3. 2010 Business Plan Targets: Sales and Income Plan

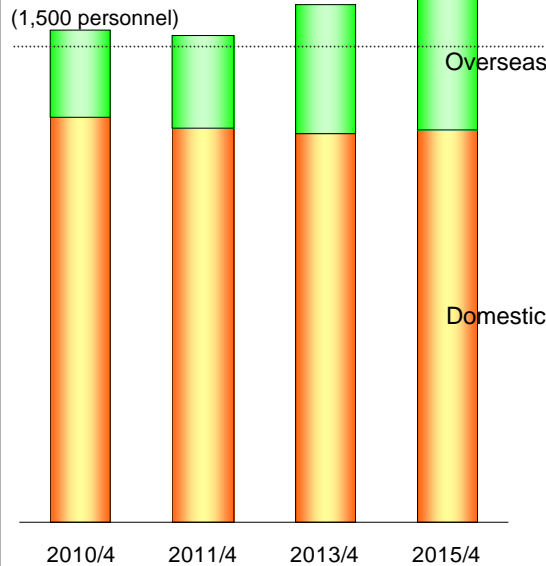
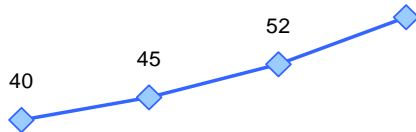


3. 2010 Business Plan Targets: Resource Plan (Consolidated)

Personnel

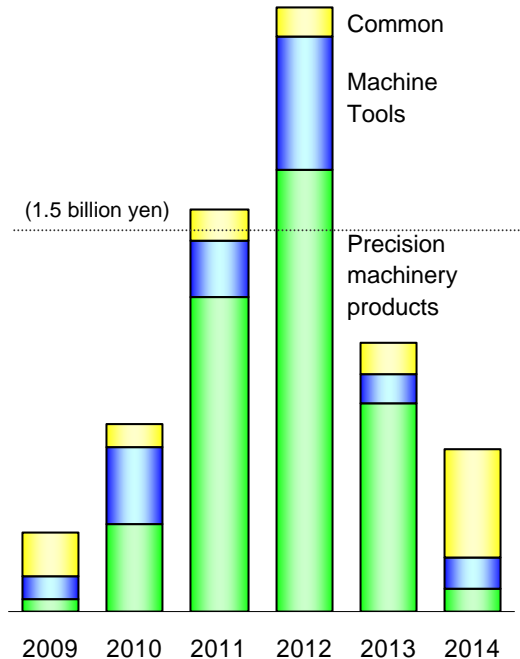
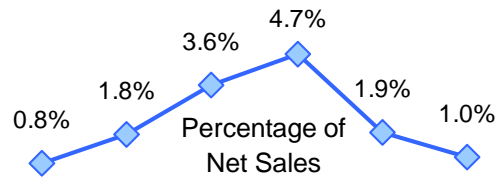
- ◇ Maintain current domestic levels
- ◇ Bolster personnel overseas in step with business expansion

Net Sales Per Person
(nonconsolidated, millions of yen)



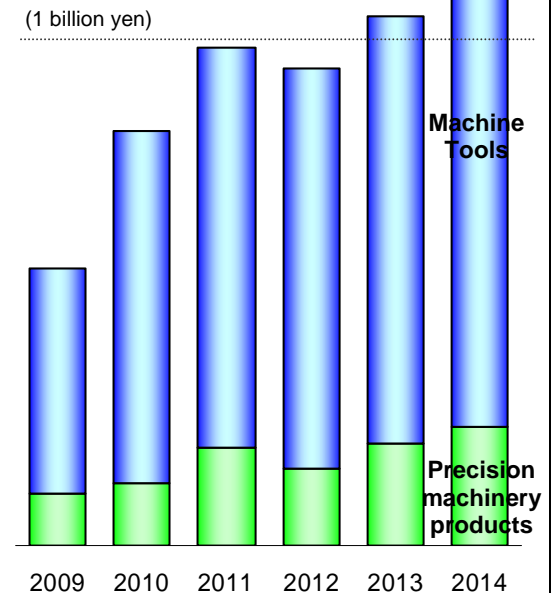
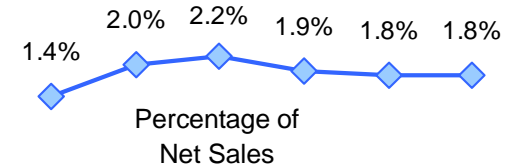
Capital Expenditure

- ◇ Equipment replacement to improve productivity for machine tools
- ◇ Invest in enhancing precision machinery products



Research & Development

- ◇ Focus on strategic development of machine tool models
- ◇ Double R&D for precision machinery products from existing levels



4. Business Strategy:

(1) Basic Policy

Achieving a High Revenue Structure Through Globalization and Increasingly High-Added Value Products

Seek to enhance a balanced operational structure for two businesses (machine tools and precision machinery products) that exhibit different market characteristics.

◇ Enhance the Machine Tools Business

- Launch **global strategic machine tools** that will outstrip the European competition
- Enhance cost competitiveness through **production in optimum locations worldwide**
- Consider alliances with other companies, M&A

◇ Enhance Service Business / Machining Technology Center Functions

◇ Enhance Precision Machinery Products Business

- **Increased high-added value** for products from the Ritto Plant and **shift overseas** for existing models
- Business expansion through investment in **new products set to become core products in the future**

4. (2) Enhancing the Machine Tools Business: Gear Cutting Machines <1>

- ◇ **Outstrip European competition in Europe and the United States and achieve No.1 worldwide share** (currently No. 2)
- ◇ **Entry into the market for large gear machines aimed at decreased dependency on the automotive sector**
- ◇ **Accelerated globalization through overseas and local production**

➤ Gear Cutting Machines

No. 2 worldwide share. Aim to become No. 1.

- Enhance cost competitiveness through overseas production
- Entry into large gear machine market

➤ Gear Grinding Machines: Priority Enhancement

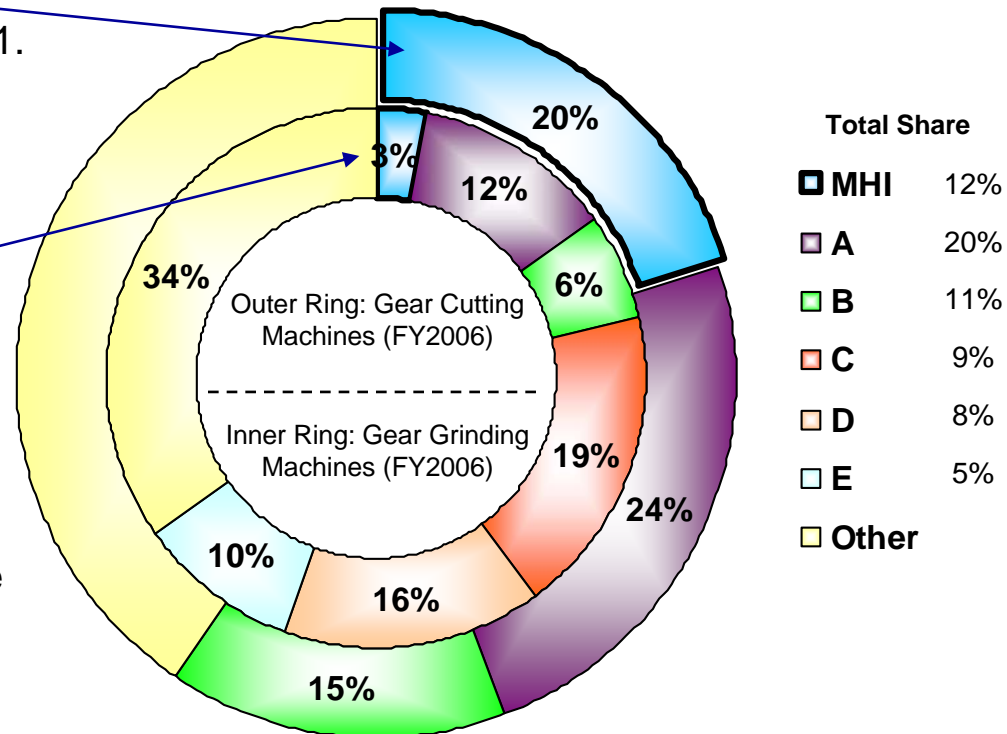
Expand worldwide share with the ZE (external gear) and ZI (internal gear) series

- Performance that surpasses that of competing machines from Europe and the United States

⇒ **Seize No. 1 total worldwide share**

MHI's Share of the Worldwide Market

(MHI Estimate)



4. (2) Enhancing the Machine Tools Business: Gear Cutting Machines <2>

◇ Expanding business in China through local production

- Expanded sales in China, the largest market

(No. of automobiles produced in 2009 was 13.7 million, twice that of Japan)

- Full utilization not only as a low cost production base but also as a **service base**
- **Building of a supply chain by developing** local plants **as procurement bases**

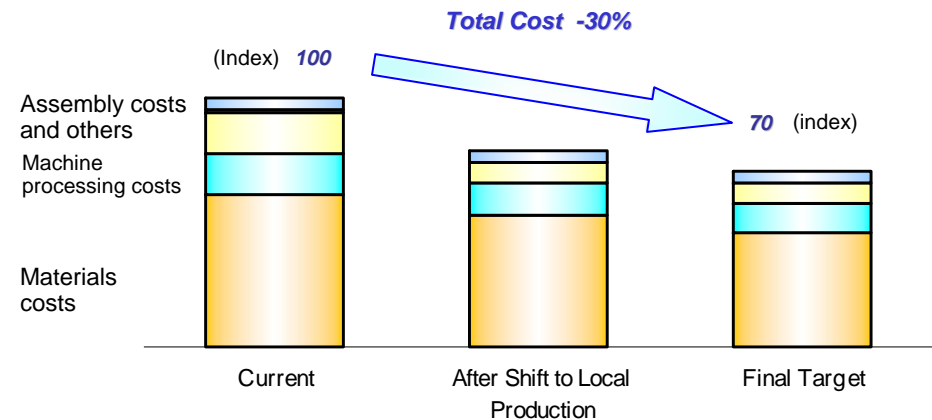
Model planned for local production: GE15A



Background to Foray

- Accelerated replacement of hand-operated machines with the high productivity and machining precision of NC machines
 - Evaluation of the increased proportion of automatic transmissions (A/T) and productivity which is three times that of hand-operated machines
- Increased domestic procurement rate for transmissions
 - With about 30% still imported, it is a key future sector

[Cost Comparisons]



4. (2) Enhancing the Machine Tools Business: Large Machines <1>

- ◇ Enhance product strengths to overcome competition in Europe, the United States and Japan
- ◇ Provide large machines from the perspective of users in an integrated fashion that includes expertise in the application of machining.

➤ Portal Machines

- Improve product strengths of the mass-produced MVR series with **more options** and cost reductions
- Target the Energy sector, upgrade and expand **super large machines**

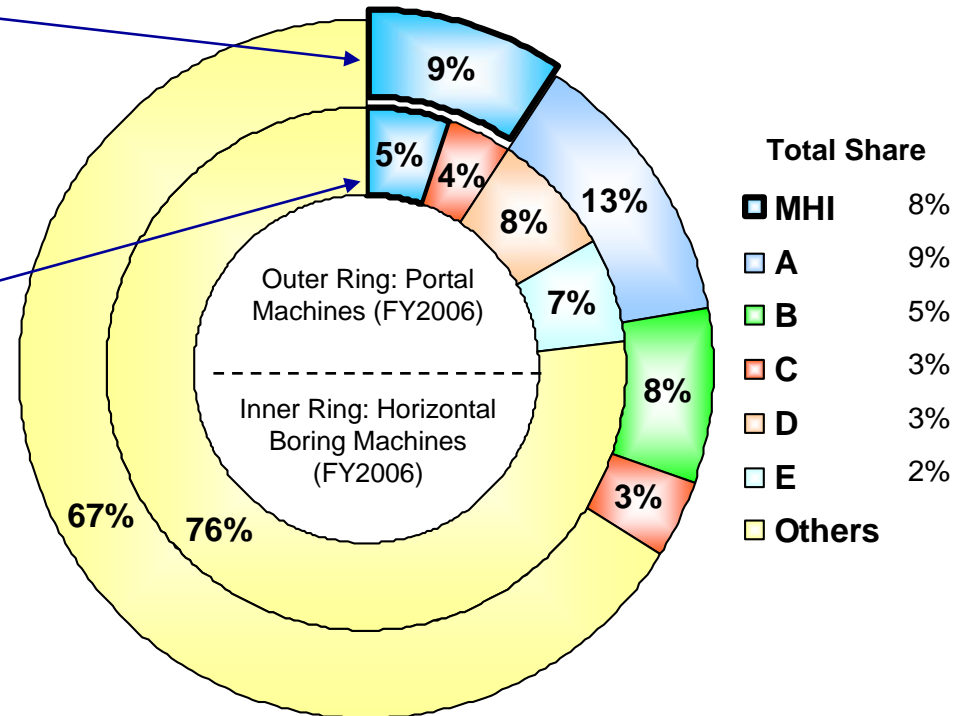
➤ Horizontal Boring Machines

- Go against competing machines from Japan and Europe in target emerging nation markets

⇒ **Aim for No.1 total worldwide share**

MHI's Share of the Worldwide Market

(MHI Estimate)



4. (2) Enhancing the Machine Tools Business: Large Machines <2>

◇ Enhancing product strengths to overcome the competition

Portal Machines

- **Enhance the MVR series, whose models are sold in the highest volumes**
 - Cost reductions through the finishing of MD (Modular Design)
 - Additional options for improved machining ability
- **Addition of M-G Series** (M-G85 pictured)
 - Portal width of 8.5 to 10 meters for **super large work**
 - **Orders for five units in launch year**



Horizontal Boring Machines

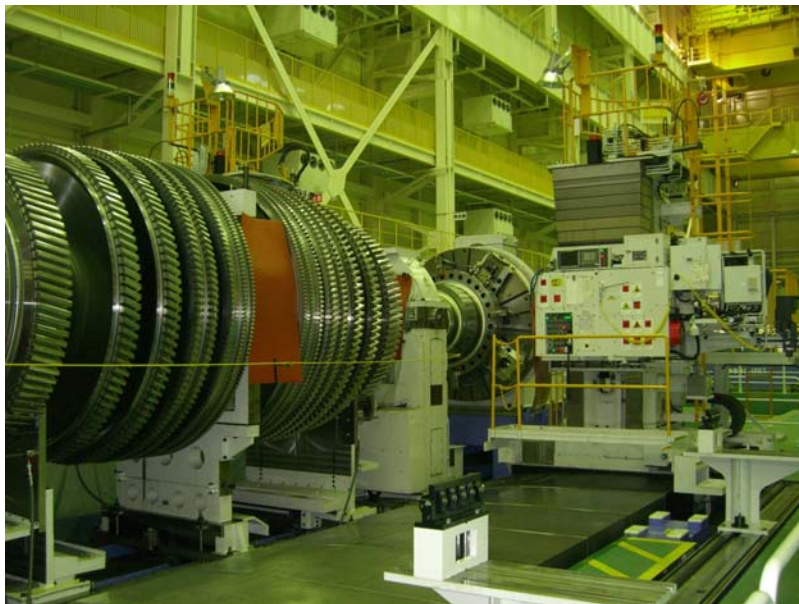
- **M-HT series model changeover**
 - Balance high-speed machining with heavy cutting and machining
- **Upgrade and expand MAF Series** (MAF-150R pictured)
 - Launch a machine for medium-sized work to fill the gap in the middle of the lineup
 - Also launch an upgraded version of the machine for large work
 - Target the **Energy sector**



4. (2) Enhancing the Machine Tools Business: Large Machines <3>

◇ Provide integrated machines that include expertise in application

- Make use of **system configuration abilities** honed by accommodating **a variety of needs in-house** to expand outside business
 - Fully utilize one of MHI's strengths not shared with industry competitors, namely, its internal needs to machine special materials for the likes of power systems and aircraft.



Delivered Machine



Delivered Machine

4. (3) Enhancing the Service Business

◇ Develop the service business as a pillar of the Machine Tool Business

- **Changeover** from repair-centric services to **proposal-based services**
- Expand **e-Service*** from Japan to overseas, **improving customer satisfaction and doubling the size of the business**

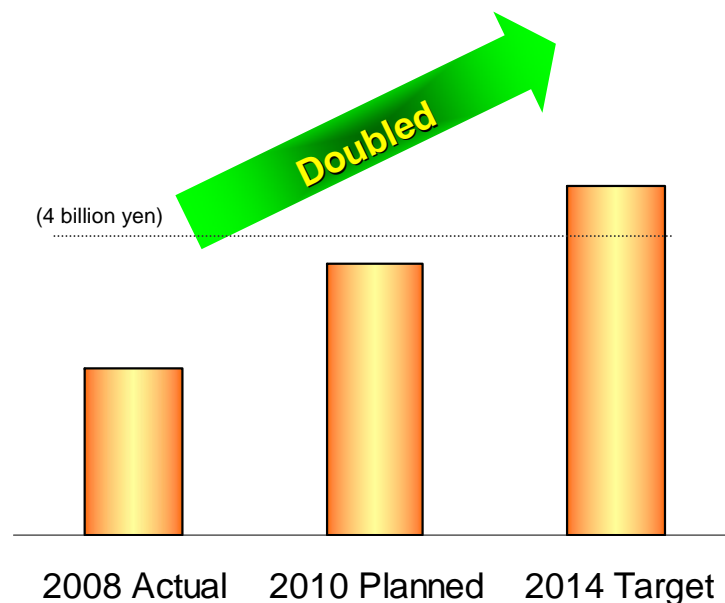
<Proposal-based Services>

- Expand the overhaul and retrofitting businesses with sales promotional tools
- Utilize competitors' customers, idle equipment
Seek to address needs

<e-Service>: Operations begun in Japan

- Improve responses through information sharing among internal departments
- Compile the expertise of experienced staff into a database
- Automation from parts management to shipping
- Shorten turnaround times, such as by improving the first attempt resolution rate

[Size of the Service Business]

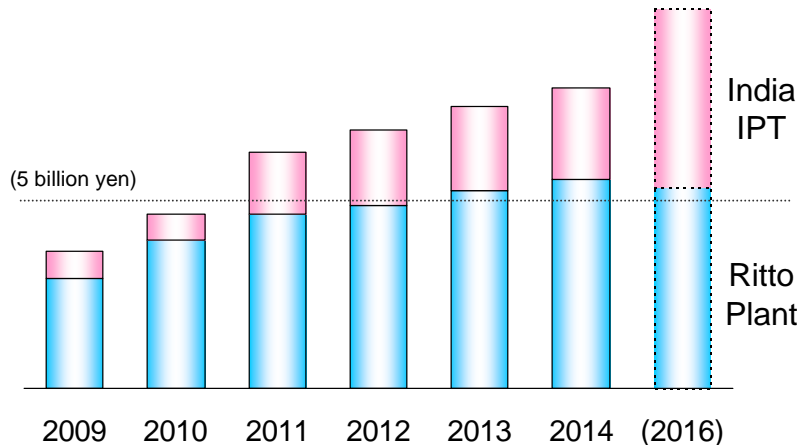


* e-Service: A web-based system that includes parts ordering, status monitoring and suggested actions to take. The system speeds up the initial response and leads to the faster resolution of customer requests.

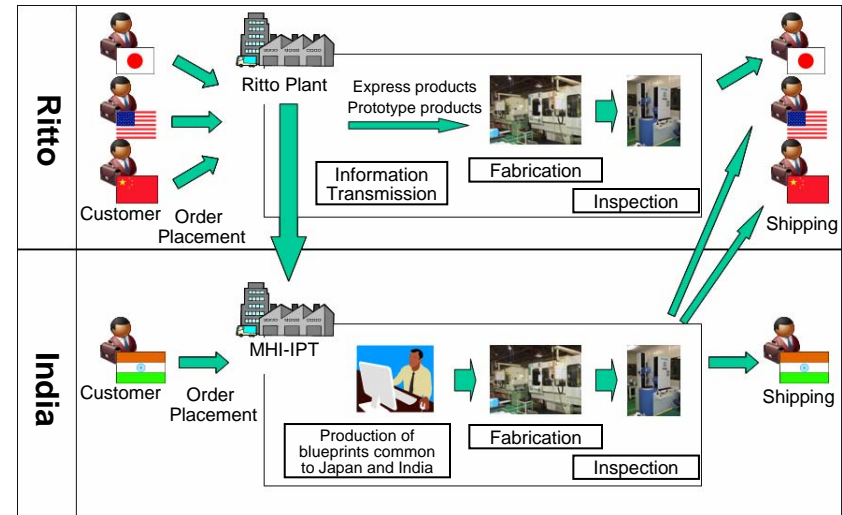
4. (4) Enhancing the Precision Machinery Products Business: Cutting Tools

- ◇ Establish a **consolidated 10 billion yen business** with **enhanced cooperation with Indian plants**
 - Build a **global production system** with India's IPT (India Precision Tools)
 - Ritto: **Development as a mother plant (advanced manufacturing technology/ product development base)**
 - Focus on **finishing tools** and **new product and development and manufacturing** for automotive, etc.
 - Marketing in the global market, expanded technical service capabilities
 - India: **Development of mass production plants** (Production base of the **global Ritto-led expansion**)
 - Expanded production capacity that also responds to rapid growth in the Indian automobile market

Production Output for Ritto and India



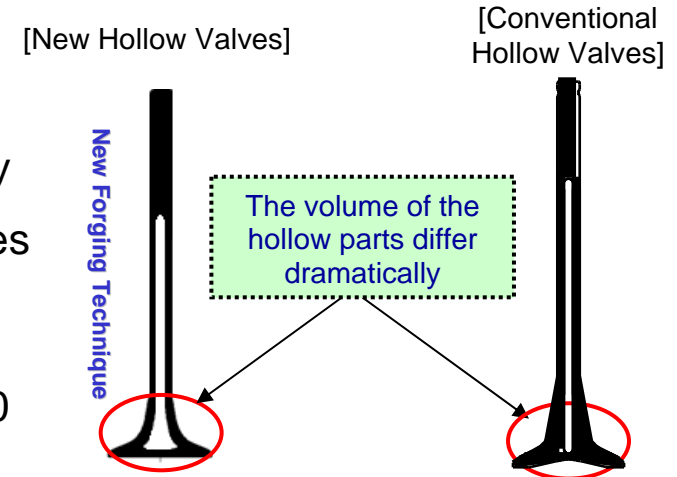
Ritto seeks to serve a global control function



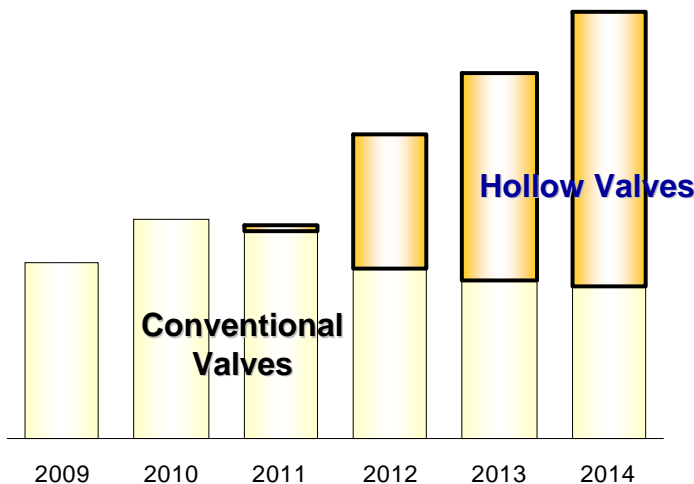
4. (4) Enhancing the Precision Machinery Products Business: Engine Valves

◆ Establishment of a low-cost, high-performance hollow engine valve business

- Achieve **up to a 20% reduction in weight** due to a new forging technique
 - Helps reduce engine strain and improve fuel efficiency
- **High heat resistance**, ideal for high-efficiency engines
 - Enclosed sodium vents heat efficiently
- Production system with monthly output of up to 25,000 valves already established

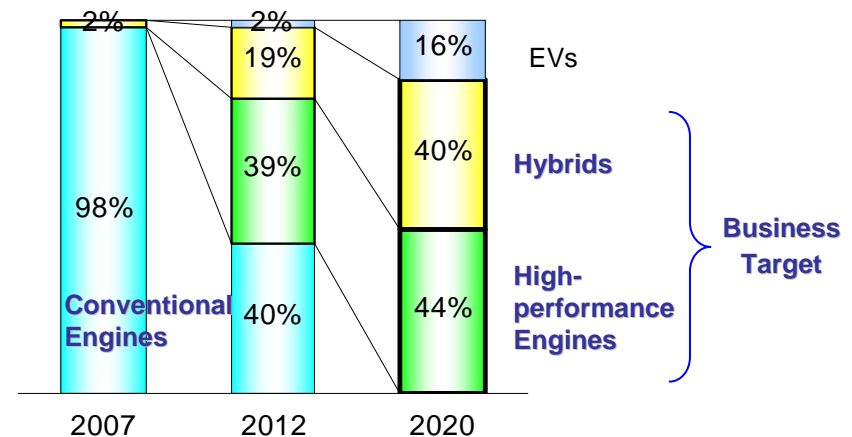


Breakdown of Valve Business



Future Forecast of Engine Types

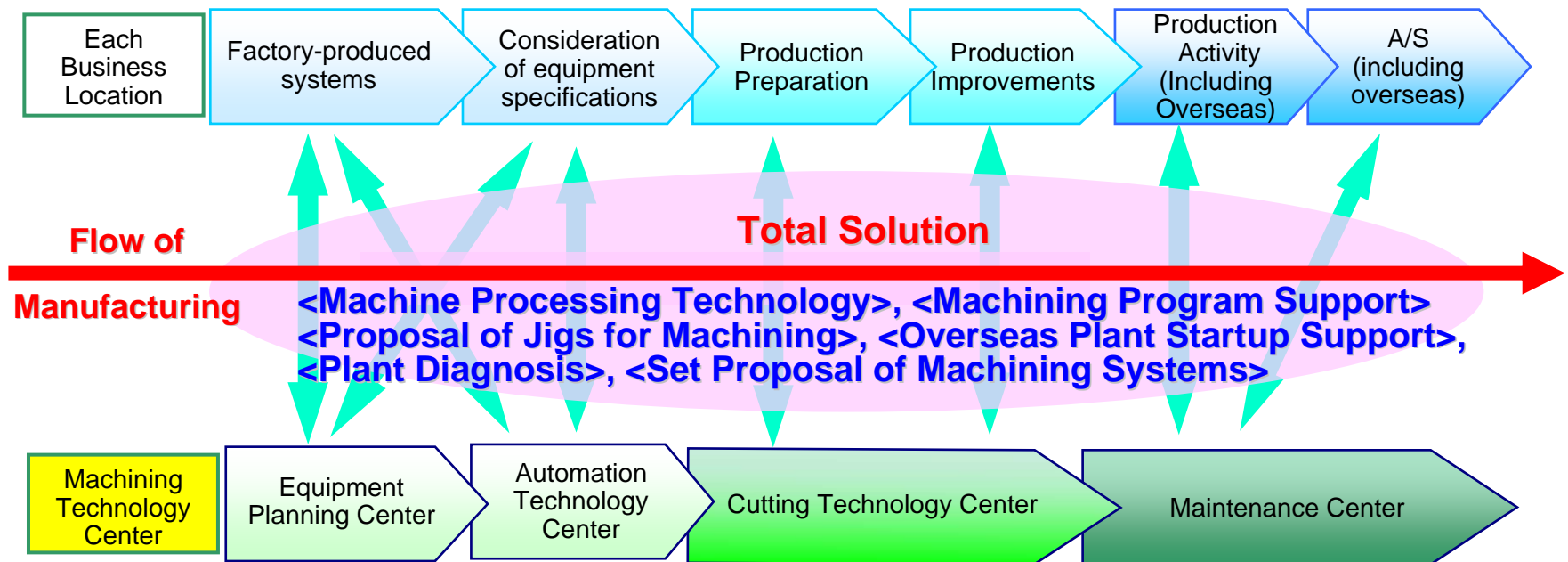
(In Japan)



4. (5) Enhancing Machining Technology Center Functions

◇ Launch machining technology center, and enhance internal manufacturing innovation

- Combine the seeds stored as a machine tool manufacturer and assume a **pioneering role of developing the latest machining technologies** that cater to diverse internal needs, while at the same time engaging in the **provision of total solutions** combining equipment and machining expertise
- This will eventually lead to **system sales outside MHI**



5. Summary

We are advancing our efforts by adopting the following as a major policy:

The achievement of a high revenue structure through globalization and an increasingly high added value domestically.

Through the expansion and enhancement of new products and our service business, in 2014, the final year of our 2010 Business Plan, we will have achieved a consolidated business size 70% larger than in 2009, and through business operation focused on investment efficiency, we plan to achieve our target profit.

Thank you for your attention.



Our Technologies, Your Tomorrow

A red arrow graphic pointing to the right, positioned below the tagline.