

Results for the Six Months Ended September 30, 2019 Management Review



November 1, 2019

IHI Corporation

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Contents

Progress with Group Management Policies 2019.....	3
Long-Term Approach and Initiatives under Three Years of Group Management Policies 2019.....	4
Review of Second Quarter.....	5
Initiatives to Materialize Group Management Policies 2019.....	6
Progress under Group Management Policies 2019.....	9
Establishing Robust Quality Assurance System.....	10
Strengthening Risk Management.....	11
Reference: Targets under Group Management Policies 2019	12

Progress with Group Management Policies 2019



Long-term approach

Tackle social and customer issues with customers and create new value



Initiatives under three years of Group Management Policies 2019

Reform businesses in earnest to tackle social and customer issues

Three reform initiatives

Strengthen business foundations

Accelerate aftermarket business development with customers from lifecycle perspectives

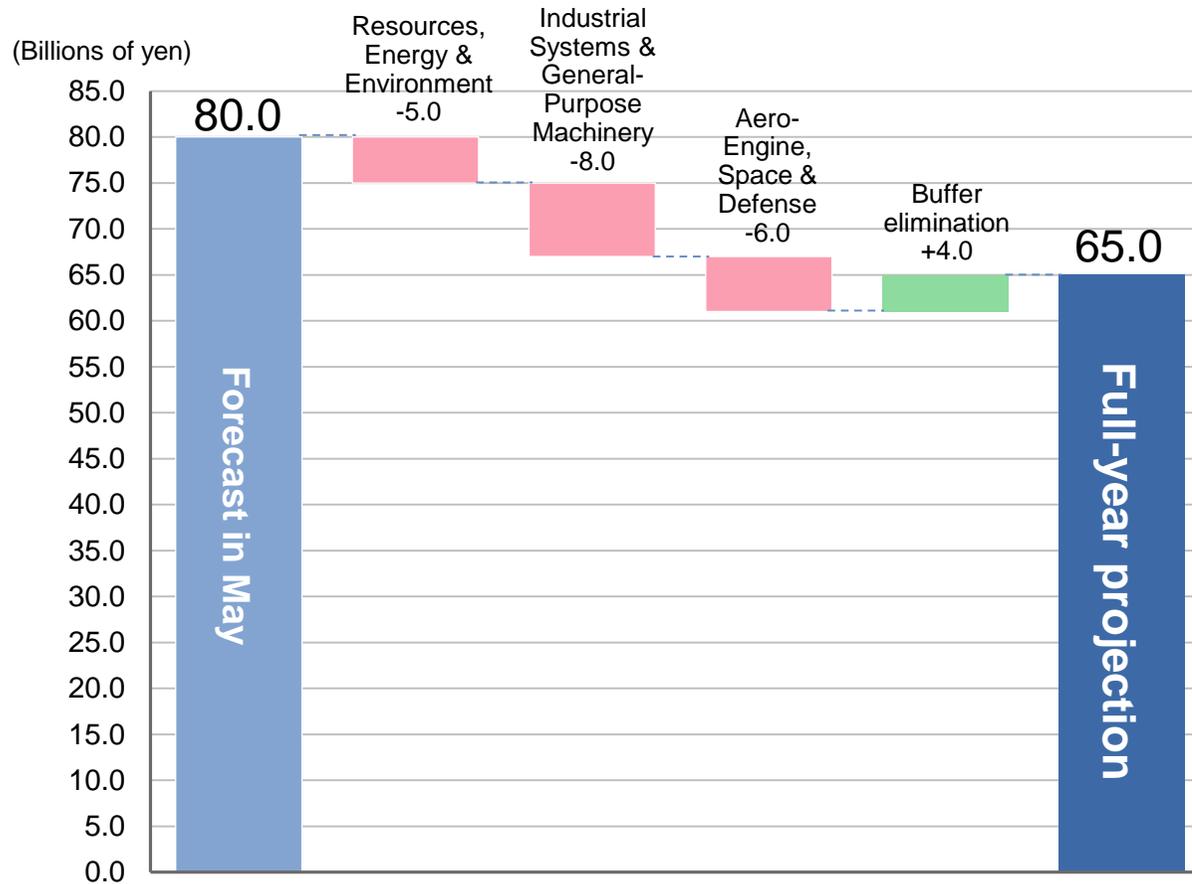
Build a robust operational structure

Create a lean and flexible operational structure

Accelerate preparations for tomorrow

Transform our business model to create value

■ Analysis of operating income fluctuations in FY2019 (compared with May forecast)



Note: Assumed exchange rate was ¥105/US\$ in May, and remains unchanged

■ Factors in operating income fluctuations

- Resources, Energy & Environment business: Deteriorating profitability in boiler, plant, and power systems projects
- Industrial Systems & General-Purpose Machinery business: Primarily, lower unit sales of vehicular turbochargers for China
- Aero-Engine, Space & Defense business: Operational recovery delays in civil aero-engine maintenance business

Resources, Energy & Environment

- We are continuing to strengthen pre-order screening and companywide monitoring to prevent major downsides
- At the same time, we strengthened monitoring at the business area level from this fiscal year, through which we identified risk factors for all project scales, charging all factors in higher costs on multiple small and medium-sized projects

Measures

- Step up recovery efforts to increase contract amounts
- Draw on experts with third-party stances and have business areas undertake assessments from initial estimate stages, thus improving profitability by swiftly detecting and eradicating risks

Reinforce after-sales services and accelerate transition to solution-driven business from life cycle perspectives that reduce carbon dioxide emissions

Vehicular turbocharger business

- Unit sales of vehicles, particularly in China, temporarily plunged as a result of an economic slowdown in China and the impact of new exhaust emissions regulations
- Although it will take some time for the Chinese market to fully recover, demand should turnaround toward the end of the fiscal year as models complying with new emissions regulations are commercialized, so a decline in second half sales volumes should be limited

Measures

- Cut fixed costs by deploying a global production system commensurate with unit sales
- Minimize the costs of procured parts by procuring globally

The medium-term direction in terms of slower automotive market growth and the adoption of electric vehicles remains unchanged, and we will accelerate the following measures on the assumption of lower long-term demand for internal combustion engines

- Reinforce after-sales service businesses
- Develop technologies and products for when electric vehicles become mainstream
- Optimize production site locations to accommodate market swings

Civil aero-engine business

In view of lessons from inadequate practices, we are thoroughly instilling a safety awareness and undertaking a range of educational efforts while deploying measures to bolster quality assurance system by identifying and addressing frontline issues

- Our business recovery lagged amid a focus on reinforcing quality check processes despite a resumption in civil aero-engine maintenance in May and the start of overhauled engine shipments from July
- Initiatives to cut costs on such offerings as PW1100G-JM fan blades and structural guide vanes ran behind schedule

Measures

- Ensure operational recovery of civil aero-engine maintenance business
 - Attain a robust quality assurance structure while improving productivity by rationalizing and optimizing work processes
 - Quickly start operations at the completed Tsurugashima facility
- Cut costs, centered on PW1100G-JM
 - Prioritize resource allocations to accelerate measures to improve in-house production costs and improve the quality of materials, thereby enhancing yields

Energy

- **We are offering solutions to help customers halve carbon dioxide emissions by 2035**
 - Marketing technologies for going to overseas sites to collaborate with customers in resolving facilities operation issues
 - ⇒ Making proposals to improve operability of existing power facilities to handle renewable energy supply and demand swings, securing feasibility study orders to optimize operations
 - ⇒ Proposing ways to enhance operational efficiency of existing boilers with low operating rates
 - Pursuing initiatives to create new businesses
 - ⇒ Stepping up efforts to modify existing coal-fired boilers to run on mixed and mono fuel wood biomass

Social infrastructure

- **Developing lifecycle businesses to materialize safe and reliable social infrastructure, centered on bridges**
 - Proposing local bridge maintenance and repairs to cater to aging facilities and assist with disaster responses
 - ⇒ Making packaged repair proposals from planning stages, centered on very challenging large construction projects
 - ⇒ Proposing preventive maintenance to check (monitoring, inspections, and diagnostics) bridge soundness
 - Developing technology to boost structural robustness, save labor, cut lead times, and make facilities smarter
 - ⇒ Developing bridge deck and tunnel segment joints with start-up enterprises

Industrial machinery

- **Developing after-sales service business based in Southeast Asia**
 - Strengthened capabilities of Bangkok base to be on frontlines of expanding lifecycle business in line with economic development in Southeast Asian countries, building maintenance service networks focused on general-purpose equipment

We have undertaken groupwide initiatives in Japan and abroad to establish a robust quality assurance structure and prevent inadequate practices from recurring in the aero engine business

Conduct training on quality and compliance

- There were two goals for these efforts. The first was to return to our founding commitment to quality and ethical conduct and reconfirm their importance. The second was to spread awareness of the new IHI Group Code of Conduct and IHI Group Quality Declaration
- In Japan, we completed group training by the end of September, with 85% of targeted people taking part
- We plan to complete training overseas by the end of February 2020

Strengthening quality assurance and quality management systems

- In June, established Quality Integration Department within Monozukuri System Strategic Headquarters, and strengthened three functional stages in quality enhancement structure

Quality Improvement Organization



*SBU = Strategic business unit

Risk Management Framework

Top-down themes

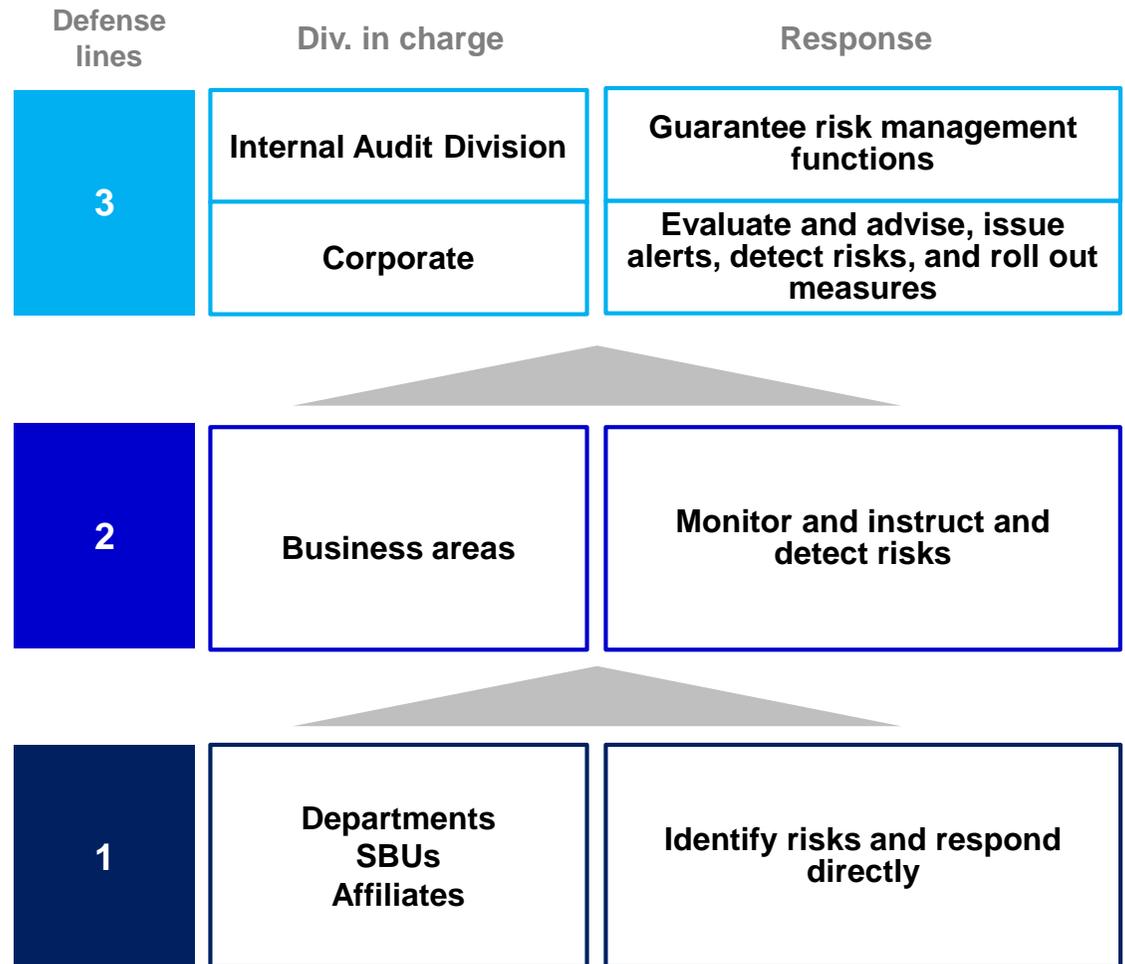
1. Reinforce compliance structure
2. Strengthen quality assurance structure
3. Address key business risks



Constantly assess and confirm response plans and implementation progress for more than 100 business-related risks

Bottom-up initiatives

Three risk levels



Reference: Targets under Group Management Policies 2019

Outlook for operating margins by business segment and companywide cash conversion cycle and return on invested capital targets

Materialize a sustainable society and growth by accelerating our transformation during three years into an enterprise that creates new value, ensuring investment efficiency in operations as we reorganize businesses

(Billions of yen)

	FY2018 results	FY2019		FY2021 target	FY2018 results	FY2019		FY2021 target	
		May forecast	New forecast			May forecast	New forecast		
Operating Income/Operating Margin					Net Sales				
Resources, Energy & Environment	3.3 0.9%	18.0 5.5%	13.0 3.8%	28.0 8.0%	377.0	330.0	340.0	350.0	
Social Infrastructure & Offshore Facilities	14.2 9.9%	15.0 8.8%	15.0 8.8%	18.0 10.6%	143.1	170.0	170.0	170.0	
Industrial Systems & General-Purpose Machinery	23.1 5.2%	25.0 5.6%	17.0 4.0%	32.0 7.3%	441.0	450.0	420.0	440.0	
Aero Engine, Space & Defense	46.4 9.4%	33.0 7.2%	27.0 6.1%	42.0 8.6%	492.2	460.0	440.0	490.0	
Companywide	82.4 5.6%	80.0 5.7%	65.0 4.6%	120.0 8.0%	1,483.4	1,400.0	1,400.0	1,500.0	
Cash conversion cycle*	97 days			80 days					
Post-tax return on invested capital**	8.7%			More than 10.0%					
Exchange rate	¥111.09/US\$	¥105/US\$	¥105/US\$	¥105/US\$	¥111.09/US\$	¥105/US\$	¥105/US\$	¥105/US\$	

*Cash conversion cycle = Working capital ÷ Net sales x 365 days

**Post-tax return on invested capital = (Operating income + Interest and dividend income) after tax ÷ (Owner's equity + Interest-bearing debt)



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