Mining Equipment and Aggregate & Cement Sector Businesses

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Director and Senior Executive Officer
President of Construction and Mining Equipment Marketing Division
Komatsu Ltd.
### Market Characteristics (1/2)

<table>
<thead>
<tr>
<th></th>
<th>Mining equipment</th>
<th>Construction equipment</th>
<th>Utility equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customers’ businesses</strong></td>
<td>Limited to regions with resources</td>
<td>Global operation is rare. Country or region specific.</td>
<td>Mainly in smaller areas</td>
</tr>
<tr>
<td></td>
<td>Global operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hours of machine</strong></td>
<td>24/7</td>
<td>8-16 hrs/day and 5-6 days/week</td>
<td>8 hrs/day (max) and 5 days/week</td>
</tr>
<tr>
<td>operation</td>
<td>Over 5,000 hrs/year</td>
<td>1,000--3,000 hrs/year</td>
<td>Up to 1,500 hrs/year</td>
</tr>
<tr>
<td><strong>Locations of machine use</strong></td>
<td>Remote areas (in main)</td>
<td>Urban, suburbia and remote areas</td>
<td>Urban and suburbia</td>
</tr>
<tr>
<td></td>
<td>Almost no relocation of machines</td>
<td>Relocation of machines for each project</td>
<td>Frequent relocation of machines</td>
</tr>
<tr>
<td><strong>Customers’ expectations</strong></td>
<td>Safety</td>
<td>Machine performance/reliability, Model range and ample attachments</td>
<td>Versatility, Ample attachments</td>
</tr>
<tr>
<td></td>
<td>Productivity/machine utilization, $/ton, and lifecycle costs</td>
<td>Initial costs</td>
<td>Initial costs</td>
</tr>
<tr>
<td><strong>Customer service</strong></td>
<td>Maker/distributor</td>
<td>Distributor/maker</td>
<td>Distributors</td>
</tr>
<tr>
<td><strong>Machine ownership</strong></td>
<td>Customers (relatively high %)</td>
<td>Customers and rental companies</td>
<td>Extensively many</td>
</tr>
<tr>
<td></td>
<td>A few</td>
<td></td>
<td>(esp. mini excavators)</td>
</tr>
<tr>
<td><strong>Competitors</strong></td>
<td>A few</td>
<td>Many</td>
<td></td>
</tr>
</tbody>
</table>
Market Characteristics (2/2)

- **Mining machines and our product offering**

  **Underground**
  - Hydraulic jumbo drill
  - Shearer
  - LHD
  - Roof support
  - Continuous miner
  - Breakers
  - Crushing & conveying equipment
  - Fleet control system
  - Bulldozer
  - Komatsu’s offering

  **Surface**
  - Drill
  - Rope shovel
  - Hydraulic excavator
  - Wheel loader
  - Motor grader
  - Dump truck
  - Komatsu’s offering

- **Market size in FY2014**

  Market size: JPY3 tn
  - Surface: JPY1.9 tn (64%)
  - Underground: JPY1.1 tn (36%)

  Production volume of minerals: surface and underground mining

  - Estimated by Komatsu

  - The ratio of underground mining equipment to increase
All commodity prices peaked out in 2011. They appear to have bottomed out in 1Q, FY2016. We anticipate that commodity prices will head for slow recovery, although they won’t recover to the peak level.
While the business environment of the mining equipment industry remains challenging in the short range, we project that demand for mining equipment will gradually recover to a 4,000-unit level in the mid to long term, supported by an increase of consumption of major minerals and corresponding increase in their production volume.

### Mining Equipment Demand and Index of Major Commodity Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Mining Equipment Demand</th>
<th>Indexed Major Commodity Consumption (Production in 2000 indexed to 100)</th>
<th>Annual Growth Rate of Indexed Major Commodity Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1,000</td>
<td>100</td>
<td>2.2%</td>
</tr>
<tr>
<td>1991</td>
<td>1,000</td>
<td>100</td>
<td>6.9%</td>
</tr>
<tr>
<td>1992</td>
<td>1,000</td>
<td>100</td>
<td>0.0%</td>
</tr>
<tr>
<td>1993</td>
<td>1,000</td>
<td>100</td>
<td>6.1%</td>
</tr>
<tr>
<td>1994</td>
<td>1,000</td>
<td>100</td>
<td>3.0%</td>
</tr>
<tr>
<td>1995</td>
<td>1,000</td>
<td>100</td>
<td>2.2%</td>
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<tr>
<td>2002</td>
<td>1,000</td>
<td>100</td>
<td>0.0%</td>
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<tr>
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<td>100</td>
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<td>2006</td>
<td>1,000</td>
<td>100</td>
<td>6.9%</td>
</tr>
<tr>
<td>2007</td>
<td>1,000</td>
<td>100</td>
<td>0.0%</td>
</tr>
<tr>
<td>2008</td>
<td>1,000</td>
<td>100</td>
<td>6.1%</td>
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<td>2018</td>
<td>1,000</td>
<td>100</td>
<td>6.1%</td>
</tr>
<tr>
<td>2019</td>
<td>1,000</td>
<td>100</td>
<td>3.0%</td>
</tr>
<tr>
<td>2020</td>
<td>1,000</td>
<td>100</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

*1: For Komatsu's mining product lines only  
*2: Major Commodity = Thermal coal, met coal, iron ore, copper  
*3: Average of annual growth rate over the period

Source: Komatsu Estimate
Sales of Mining Equipment and Outlook

• For the first 3-Month period of FY2016, sales declined by 15% from the corresponding period a year ago, to JPY98.3 billion, as affected by the Japanese yen’s appreciation and reduced sales of parts.
• We project that full-year sales for FY2016 will decrease from FY2015, as affected by a decline in demand for new equipment and the Japanese yen’s appreciation.
1. Growth Strategies Based on Innovation

- Development of next-generation construction and mining equipment as well as next-generation components
- Deployment of AHS*1 and reinforcement of platform for mining solutions

*1: AHS stands for Autonomous Haulage System and means a system to operate unmanned dump trucks.

2. Growth Strategies of Existing Businesses

- Contributions to expanding sales by developing new products, incl. DANTOTSU products
- Expansion of earnings in the value chain
- Expansion of the mining equipment business
- M&A

3. Structural Reforms Designed to Reinforce the Business Foundation

- Continuous reduction of costs (production and fixed costs)
- Reforms of spare parts operation
- Lean and powerful development
- Development of human resources with global perspective and framework to promote diversity for sustainable growth

IoT at Komatsu

IoT enables connection and sharing of real-time information concerning all processes from production to sales.
Growth Strategies Based on Innovation: AHS

- We have delivered 100 AHS autonomous dump trucks (cumulative) to mines in Australia and Chile.
- We have been controlling an AHS autonomous dump truck fleet from urban area located over 1,500km away from the mine in Australia.
- AHS has proven a high degree of flexibility capable of operating 24/7 in different work conditions, such as iron, coal and other mines.
- We hauled 1,000,000,000 tons (cumulative) of earth as of September 2016.

Western Australia: Riot Tinto’s iron ore mines
- Total of over 70 units in operation at Nummuldi, Yandicoogina and HopeDown4.

Chile: Codelco’s copper mine
- 18 units in operation at Gaby mine.
Growth Toward Our 100th Anniversary and Beyond

Although we assume that demand will remain sluggish for the time being, we will achieve our growth above the industry’s average by promoting growth based on innovation and of existing businesses.

*Sales by adding growth above the industry’s average*

*Growth acceleration with the acquisition of Joy Global*

Sales: US$ 3.0〜3.5 Bn
Op. margin: 10〜15%

**Mid-Range Management Plan**

- 2016
- 2017
- 2018
- 2019
- 2020
- 2021

Opportunity: Recovery of demand for mining equipment
Opportunity: Recovery of demand for construction equipment

**Our 100th anniversary**

DANTOTSU machine tools as well as sheet-metal and press machines

Gigaphotonz EUV
AHS and mining equipment
SMARTCONSTRUCTION
DANTOTSU products and new models of construction equipment, aftermarket products, Dantotsu No.1 in ASIA, quarries, cement production, etc.
Aggregate and Cement Sector
Characteristics of Aggregate and Cement Sector

1. Market characteristics

[Customers: distributed worldwide] [Main machines: mostly made in Japan]

<table>
<thead>
<tr>
<th></th>
<th>Mining customers</th>
<th>Aggregate/cement customers</th>
<th>Construction customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of customers</td>
<td>Few (global players)</td>
<td>Many</td>
<td>Extensively many</td>
</tr>
<tr>
<td>Hours of machine use</td>
<td>24/7 Over 5,000hrs/yr</td>
<td>10-16hrs/day, 6days/week</td>
<td>8-16hrs/day, 5-6days/week</td>
</tr>
<tr>
<td>Site location</td>
<td>Mainly remote areas</td>
<td>Cities &amp; suburbs</td>
<td>Cities &amp; suburbs</td>
</tr>
<tr>
<td>Product destination</td>
<td>Many</td>
<td>Few (locally produced &amp; consumed)</td>
<td>N/A</td>
</tr>
<tr>
<td>Customer needs</td>
<td>Safety, $/ton</td>
<td>Safety, environment, $/ton</td>
<td>Initial cost, trade-in value, fuel cost</td>
</tr>
</tbody>
</table>

- Positioned in the middle of mining and construction sectors.
- Site operation resembles mining.
- Compared to mining, more sites, smaller scale and relatively smaller machines.
- Locally produced and consumed due to low unit price, and limited distance of transportation.

2. Machines for use and production process

- Loading and hauling of ore
  - Mining: Small no. of machines, Super-large machines
  - Aggregate/cement: Large no. of machines, Large & medium-sized machines
  - Construction: Small no. of machines, Large & medium-sized machines

- Transportation
  - Foreign demand: exports
    - Iron, copper, gold, coal, etc.
  - Domestic demand: Transport within 50-70km
    - Crushed stone, gravel, sand
    - Limestone
    - Cement

- End products
  - Buildings, automobiles, smart phones, etc.
  - Buildings, homes, etc.
1. Expanding cement production
Stable expansion supported by economic growth centering on emerging countries

Global production, GDP, Urbanization rate

- Cement production volume
- Per capita GDP (world average)
- Urbanization rate: 53.8%

Urbanization rate: 44.6%


Asia
CIS
Europe
Latin America etc.
North America
Japan


Cement production in China and other countries

- Soaring in China
- Gradually increasing in other countries

Cement production by region (excl. China)

Soaring in emerging countries
Stable in advanced countries

2. Structural change of the industry (M&A and emerging global majors)

Large companies becoming larger and global, mainly reflecting low interest rates.

- Lafarge Holcim established (2015)
- Heidelberg Cement acquires Italcement (2016)
Reinforcing Global Presence in the Aggregate & Cement Sector

**Basic policy**

| 1) | By creating an exclusive unit in the head office in Tokyo, we will make efforts as a company-wide project. |
| 2) | To expand business, we will capitalize on our know-how in building customer relationships and global operations, accumulated in the mining equipment business. |
| 3) | We will take full advantage of our global network of distributors. |

We position the aggregate & cement sector as the third important market segment, following mining and construction.
Thank you for your interest in Komatsu.