

between equity and borrowed capital. This approach avoids short-term fluctuations in interest rates on the capital markets that may distort the information provided by the value management system.

The HHLA Group's operating result (EBIT) rose year-on-year by 4.8 % to € 164.0 million in the 2016 financial year (previous year: € 156.5 million). ► see also Group Performance, page 41
Average operating assets were up slightly at € 1,317.6 million (previous year: € 1,303.1 million) and the return on capital employed increased by 0.4 percentage points year-on-year to 12.4 %. The minimum ROCE of 8.5 % was therefore comfortably exceeded by 3.9 percentage points. The HHLA Group therefore generated a positive value added of € 52.0 million in the 2016 financial year (previous year: € 45.7 million).

Key Figures Value Added

in € million	2016	2015	Change
Operating income	1,241.9	1,191.0	4.3 %
Operating expenses	- 1,077.9	- 1,034.5	4.2 %
EBIT	164.0	156.5	4.8 %
Ø Net non-current assets	1,211.1	1,213.3	- 0.2 %
Ø Net current assets	106.5	89.8	18.6 %
Ø Operating assets	1,317.6	1,303.1	1.1 %
ROCE in %	12.4	12.0	0.4 pp
Capital costs before tax ¹ in %	8.5	8.5	0.0 pp
Capital costs before tax	112.0	110.8	1.1 %
Value added in %	3.9	3.5	0.4 pp
Value added	52.0	45.7	13.7 %

¹ Of which 5.0 % for the Real Estate subgroup

Non-Financial Performance Indicators

The main non-financial performance indicators are container throughput and container transport volumes. In addition to the continuous dialogue that HHLA maintains with its customers, the company makes extensive use of macroeconomic forecasts as early indicators for volume trends and its operating activities. These include the anticipated development of gross domestic product for important trading partners and the subsequent estimates for foreign trade and import/export flows, as well as for container traffic on relevant routes and changes in the correlation between gross domestic product and containerised trading volumes.

Research and Development

One of HHLA's strategic objectives is to continuously improve the efficiency of its operating systems, and consequently its competitiveness, by developing application-oriented technologies. The main focus of these activities is therefore on engineering and IT-based innovation projects. Due to close collabora-

tion with technical universities, institutes, industry partners and government authorities, joint projects can be planned, managed and developed by task forces.

In the 2016 financial year, HHLA mainly focused its resources and available capacity on continuing its research in the area of battery-powered container vehicles for horizontal transport.

Battery-Powered Container Vehicles

Researching and developing eco-friendly drive systems is a key aspect of HHLA's sustainable business model. The BESIC project (Battery Electric Heavy Goods Transports within an Intelligent Container Terminal), which was funded by the German Federal Ministry of Economics and Energy and conducted by HHLA at the Container Terminal Altenwerder (CTA) in collaboration with Gottwald Port Technology, Vattenfall Europe Innovation and several research bodies, was successfully concluded in the year under review. As part of the project, a battery management system was developed that uses targeted data exchange between the energy supplier and the terminal to ensure that the batteries for the battery-operated automated guided vehicles (AGVs) are always charged at the best-possible time, from both an environmental and operational perspective.

Performance Certified

In order to document their performance, CTA and CTT once again received certification in accordance with the Container Terminal Quality Indicator (CTQI) in the reporting year. The standard, which was developed by the Global Institute of Logistics and Germanischer Lloyd, checks criteria such as the safety, performance level and efficiency of a terminal on both the quay-side and in the hinterland, as well as its links to pre- and onward-carriage systems. With their successful certification, the terminals once again confirmed their high levels of performance and compliance with all quality standards.

Other Research Projects

The foundation for a further research project at CTA was also laid in the year under review. It is supported by the German Federal Ministry of Transport and Digital Infrastructure (BMVI) under the recently introduced Innovative Port Technologies (IHATEC) incentive scheme. The project promotes the development of solutions for man-machine interaction in shared working environments.

Purchasing and Materials Management

Purchasing is a shared service provided by the HHLA Group's management holding company in Hamburg. Important objectives are pooling and harmonising purchasing processes to meet internal customers' requirements in terms of service and performance as far as possible. The purchasing team focuses on standardising the supplier base to ensure that capital goods, raw materials, consumables, supplies, services and other prod-