

economies of scope offered by the existing network and the opportunities it presents to tap additional growth potential along the transport flows of the future.

In its non-listed **Real Estate subgroup**, HHLA pursues the objective of developing into an integrated, market-viable developer of specialist properties. The corporate unit HHLA Real Estate aims to be Hamburg's flagship provider of intelligent district management and development on the basis of this clear strategic alignment and reliable prioritisation. As such, HHLA is becoming a much sought-after specialist in its clearly defined areas of expertise.

Corporate and value management

HHLA's primary financial objectives include the long-term, sustainable growth of its enterprise value. HHLA uses a Group-wide value management system for the planning, management and monitoring of its commercial activities. No changes were made to this system in the 2020 financial year.

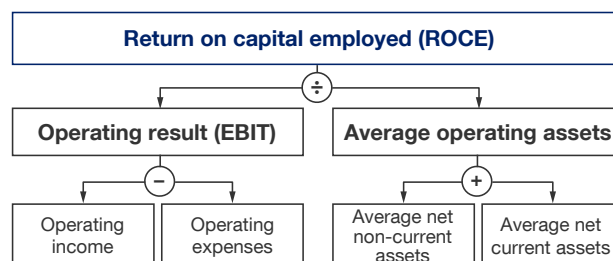
Financial performance indicators

The key operational management parameters used by the HHLA Group are the operating result (EBIT) and the average operating assets (capital employed). EBIT and capital expenditure as key drivers of the average capital employed are the main intra-year and short-term performance indicators. Return on capital employed (ROCE) is calculated for the measurement of long-term, value-oriented performance and is also used to determine the annual value added. The HHLA Group calculates ROCE as a ratio of the operating result and the average operating assets used.

Commercial activities are generally regarded as value-generating if ROCE exceeds the cost of capital and they make a positive value contribution. Such capital costs correspond to the weighted average of equity costs and the cost of borrowed capital. As in the previous year, HHLA used a weighted average cost of capital of 8.5 % before tax to calculate value growth at Group level in the 2020 financial year. This minimum interest rate reflects the Executive Board's assessment of a medium-to long-term rate of return arising from a balanced relationship 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.

Wertmanagement

ROCE – Bestimmungsgrößen und Einflussfaktoren



Despite the challenging economic environment and the global coronavirus pandemic, the HHLA Group generated a positive EBIT result of € 123.6 million (previous year: € 221.2 million) in the 2020 financial year. The year-on-year decrease in EBIT amounted to approximately 44 %. **Earnings position**

Average operating assets rose slightly by 2.1 % to € 2,081.3 million (previous year: € 2,039.4 million) in the reporting period. **Financial position**

At 5.9 % (previous year: 10.8 %), return on capital employed failed to reach the targeted long-term rate of return of 8.5 %. This resulted in a negative value added of € 53.3 million for the 2020 financial year (previous year: € +47.9 million).

Key figures value added

in € million	2020	2019	Change
Operating income	1,355.3	1,434.5	- 5.5 %
Operating expenses	- 1,231.7	- 1,213.3	1.5 %
EBIT	123.6	221.2	- 44.1 %
Ø Net non-current assets	1,971.3	1,922.3	2.5 %
Ø Net current assets	110.0	117.1	- 6.0 %
Ø Operating assets	2,081.3	2,039.4	2.1 %
ROCE in %	5.9	10.8	- 4.9 pp
Capital costs before tax ¹ in %	8.5	8.5	0 pp
Capital costs before tax	176.9	173.3	2.1 %
Value added in %	- 2.6	2.3	- 4.9 pp
Value added	- 53.3	47.9	neg.

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 collaboration with technical universities, institutes, industry partners and government authorities, joint projects can be planned, managed and developed by working groups.

In the 2020 financial year, HHLA mainly focused its resources and available capacity on research as part of the subsidy programme for Innovative Port Technologies (IHATEC).

Container terminal 4.0

The Container Terminal Altenwerder (CTA) is one of the most highly automated container terminals in the world. Since it opened in 2002, HHLA has constantly been researching and working on improving and expanding automation at the site. Right at the start, a paradigm was established whereby automated work areas are separated, isolated and off-limits to staff in order to guarantee occupational safety. This principle has always been upheld. Today, however, this paradigm is preventing the ramping up of automated processes, as it inevitably excludes them from areas used by people. The research project "Container terminal 4.0 – a paradigm shift in the automation of container terminals via human-machine interaction rather than separation" is to be conducted as part of the IHATEC subsidy programme (supported by the Federal Ministry of Transport and Digital Infrastructure). The project's main objective is to develop automation solutions for various container crane systems used at the terminal in work areas shared by people and machines (e.g. alongside ships and trucks) and to implement them as prototypes. At the same time, the experience, knowledge and evidence gathered during this process should play a fundamental role in establishing the safety standards needed to create a reliable framework for future automation projects.

INTERACT

HPC and Container-Transport-Dienst GmbH (CTD) initiated the IHATEC research project INTERACT (integration of autonomous trucks in container terminal operating processes) in conjunction with the Karlsruhe Institute of Technology (KIT). As part of the project, a feasibility study and a subsequent gap analysis determined the extent to which self-driving trucks can be deployed simultaneously on public roads and in closed-off terminal areas – and what technical, operational and legal

requirements should be imposed on the vehicles themselves as well as on the transport service providers and terminals involved.

For this purpose, relevant terminal categories were first defined and their current typical processes with regard to handling trucks were analysed. Handling processes were then defined, including for self-driving trucks. On the basis of these target processes, it was possible to define the requirements for the vehicles, terminals and vehicle operators. A total of 84 requirements were identified for ten different terminal categories.

Solutions that appeared suitable for fulfilling the respective requirement were identified for each of these requirements. A total of 177 technical, structural and organisational solutions were found and their feasibility assessed.

The project was successfully completed in 2020. It became evident that the current status of technology does not yet allow for the use of self-driving trucks for all terminal categories considered. At the same time, however, it was shown that there are at least technically feasible solutions for each requirement, which will have to be developed in the near future. The development themes identified were systematically categorised in the form of a road map.

Hamburg TruckPilot

With the Hamburg TruckPilot field test, MAN Truck & Bus and HHLA are conducting a highly innovative research and testing project to develop automation solutions in road transport. The aim is to analyse the requirements for the customer-specific deployment and integration of self-driving trucks in the automated container handling process under realistic conditions, and to review its feasibility. The prototype trucks equipped with the corresponding electronic automation systems should be able to operate automatically within CTA. The project is split into three phases: the preparation phase, which ran until the end of 2018, served to define the underlying technical conditions. The test phase, which was slated for completion by June 2020, was largely carried out despite the restrictions resulting from the coronavirus pandemic. This comprised the technical development of the system at MAN's testing centre in Munich in accordance with the specific requirements identified during the preparation phase. The scheduled field test between July and December 2020 could only be carried out with restrictions. All parties involved are now checking whether a test phase may be possible in 2021 in more practical settings based on customer needs.

Aerolnspekt

Storage cranes at the automated container yard are the linchpin of HHLA's cutting-edge, high-performance container terminals. The crane rails are subject to extreme requirements in terms of their position and height. However, the geomorphological