



HVCC

PORt PARTNERSHIPS IN PRACTICE

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Two trends have defined container shipping in the past decade. To start with, bigger and bigger ships were built at an unprecedented pace and the result was systemic overcapacity, which triggered various consolidations among shipping companies. The second is that port authorities and terminal operators have been faced with major challenges owing to this development.

Upgrading an existing quay wall to accommodate new gantry crane models, for example, requires much more time for preparation and construction than the construction of an 18,000 TEU ship.

New requirements also came into effect on navigating estuaries, on turning circles and approach manoeuvres, lines arrangement and the condition of bollards. It became necessary to manage the heavy operational peak times in processing mega-ships and in the distribution of the cargo to feeder and inland ships, trains and trucks.

Meanwhile one important element faded into the background at several ports, even though it would offer additional scope for optimisation. Namely, closer collaboration among each other, and with all involved parties. This article explains how the challenges resulting from the changing size of ships were recognised early on in Hamburg and how they have been successfully mastered using a unique model, the Hamburg Vessel Coordination Center (HVCC).

THE HAMBURG WAY: PARTNERSHIP

A project entitled the Feeder Logistics Center (FLC) was launched by Hamburger Hafen und Logistik (HHLA) back in 2004. The motivation behind this project was reducing the number of calls to terminals that a feeder ship had to make. For commercial feeders, the average was four terminal calls per port visit, both at the neighbouring HHLA and Eurogate container terminals,

as well as other terminals in the port area. As a result, HHLA's competitors, Eurogate Container Terminal Hamburg (CTH) and the commercial feeder operator Unifeeder, were also persuaded of the benefits of adopting a central feeder coordination strategy.

HHLA and Eurogate launched an independent company called Hamburger Feeder Logistik Zentrale (FLZ) or Feeder Logistics Center (FLC) in 2009. For the shipping companies and customers at the Port of Hamburg, the FLC represents a neutral platform with direct access to any of the relevant terminals' operating systems. The FLC assists shipping companies 24 hours a day with berth availability and stowage planning. It also ensures that pilots, tugs and boatmen are ordered on time. This allows the shipping companies to concentrate on their core business, and the partner terminals benefit from having the FLC on hand as a 24-hour contact

partner for feeder ship handling queries. The FLC checks work programmes and stowage plans on behalf of the terminals, thereby reducing waiting times for ships. Coordination of feeder ship calls by the FLC central interface thus ensures that the capacity utilisation of berths is optimised. Today, the FLC coordinates around 4,000 terminal calls per year as a department of the HVCC, including calls by inland vessels since 2016.

As a result of the growth of containerships, cruise ships, bulkers and ConRo ships, it seemed only logical to expand the coordination of the FLC. In order to better manage the arrivals and departures and regular calls by major ships at the port's 30 or so terminals, and to tailor them more closely to the nautical requirements of a tidal port, work began in 2012 on developing a concept for what is now known as the Nautical Terminal Coordination (NTC). Three years later, the FLC was renamed the Hamburg Vessel Coordination Center (HVCC). The HVCC is comprised of the FLC and the NTC departments.

LEARNING FROM AVIATION

When developing the concept for the NTC, experiences from other industries aiming to respond to similar situations were analysed. It seemed natural to take a closer look at the world of aviation. The increase in traffic generally, but also the evolution of very large aircraft such as the Airbus A380 required that hub airports put major infrastructure

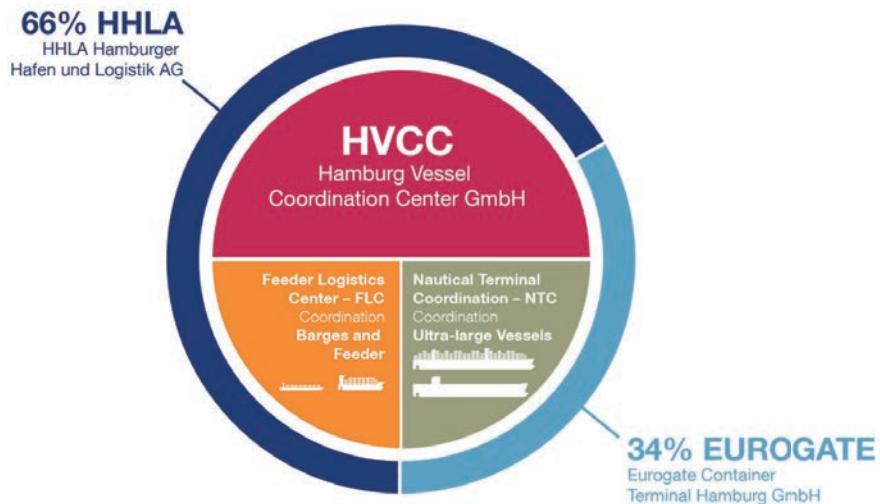


Figure 1: HVCC organisational structure

in place and adapt operational processes. In some cases, it was possible to develop whole terminals or add additional runways to accommodate these innovations.

One trailblazer in Airport Collaborative Decision-Making (ACDM) is Zurich Airport, where all the stakeholders involved in airport operations work together in an airport steering room and share relevant data. Direct and open communication forms the basis for this concept. Disruptions in operations are solved within minutes at a central conference table.

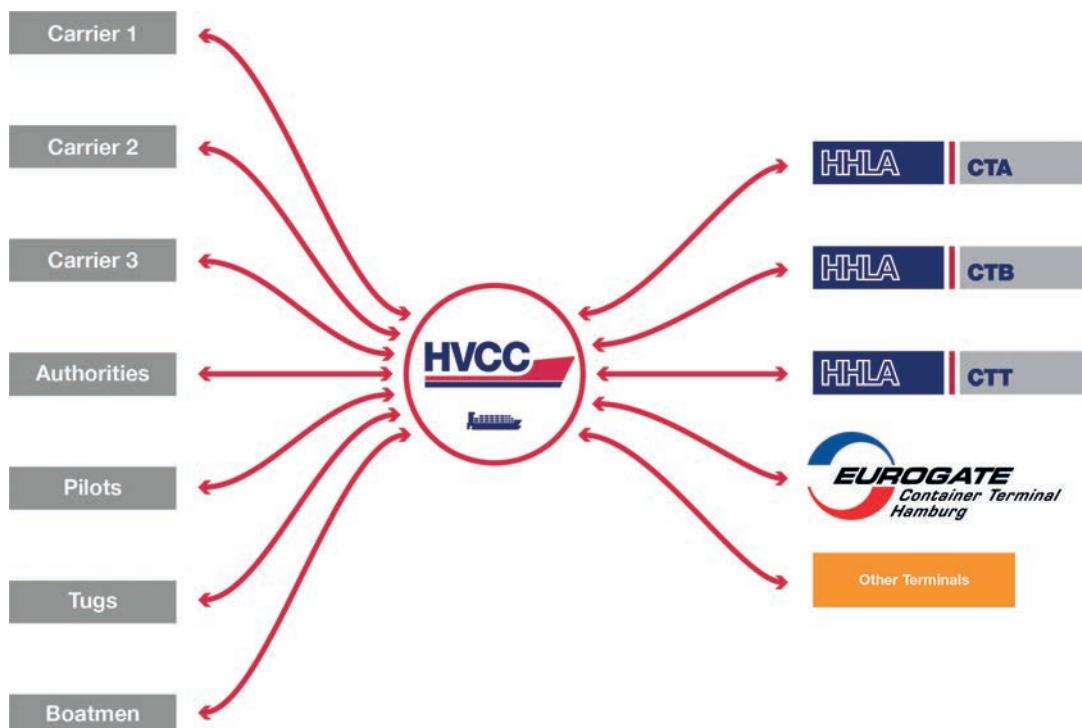
Monthly stakeholder meetings provide an example of the open communication

of defined KPIs, always with the aim of continually improving processes. Participation in the ACDM is voluntary and some stakeholders, including several high-profile airlines, were not involved from the start. The example of Zurich shows how optimising the total value added of limited infrastructure can be beneficial, instead of merely fulfilling the individual interests of a specific stakeholder in a specific situation.

INSPIRING PARTNERS TO PARTICIPATE

Today, the NTC's role is to act as the central operating contact partner for shipping companies and customers of the Port of

Figure 2: Feeder coordination by the FLC



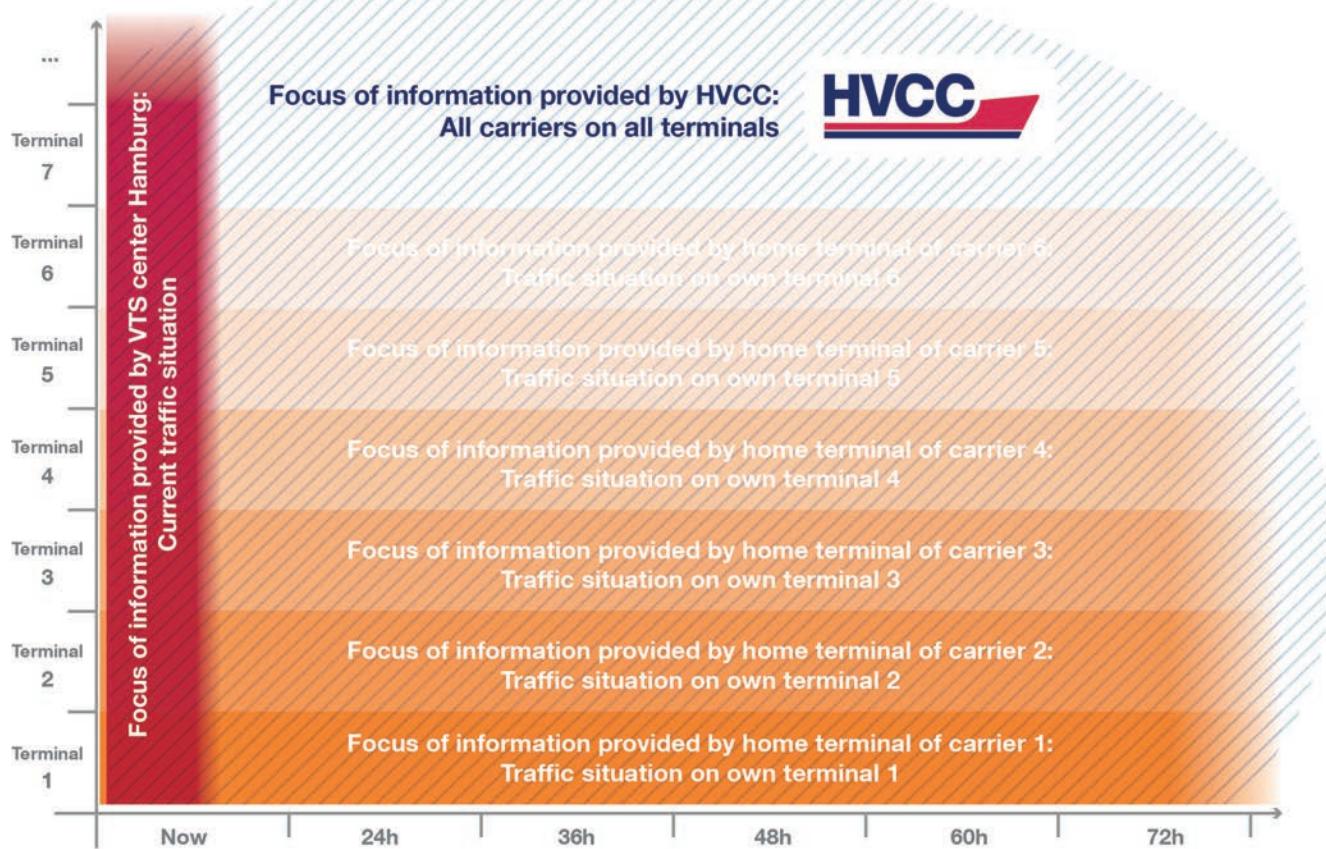
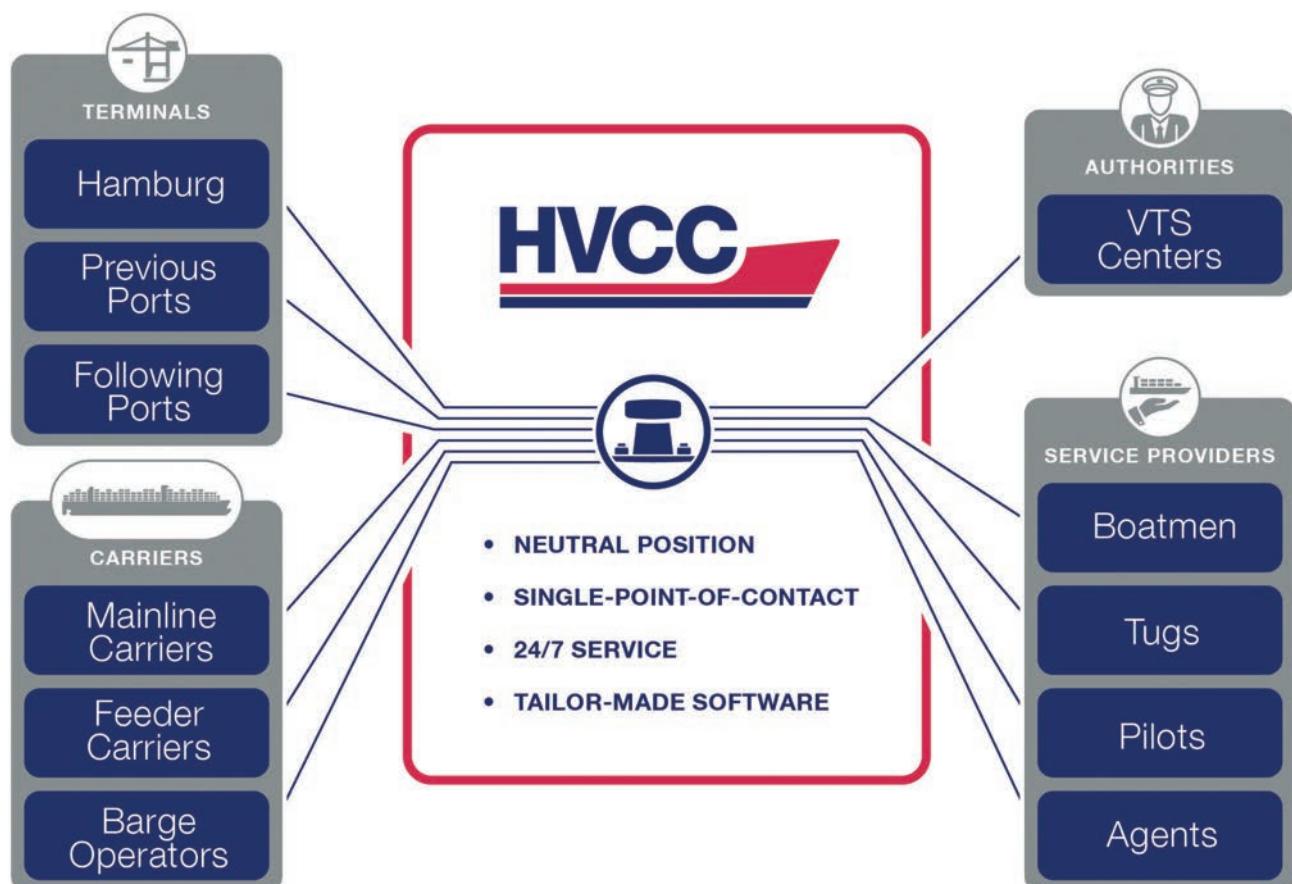


Figure 3: The NTC's value added services



Hamburg when it comes to the arrival and departure of their ships. The NTC monitors each ship on its rotation through Northern Europe and assists shipping companies and brokers in planning their vessels' passage from the previous port to the Port of Hamburg, as well as their vessel's departure from the port.

For its partner terminals, the NTC pools all the different operational information to create a comprehensive traffic overview. This enables it to detect conflicts early on and develop solutions that the NTC discusses with the stakeholders involved. On behalf of the terminals, the NTC takes charge of communications with the Hamburg Vessel Traffic Service Centre and the Elbe pilots and is also available 24 hours a day as a point of contact for the authorities and pilots.

The challenge in setting up the NTC was to convince stakeholders of the added value inherent to such an organisation. One of the concerns raised repeatedly by shipping companies at the outset was that they knew exactly where their ships were. Terminal operators also explained that they knew exactly when the ship had been handled. However, the HVCC/NTC concept enjoyed great support from the start from the public authorities that had called for proper centralised operational coordination and delineated its role as guaranteeing navigational safety on the river and in the port. This prevented them from having to deal with coordinating traffic with shipping companies and terminals, which was time-consuming and geographically extensive.

Today, the NTC's services are used by almost all container-shipping companies visiting the terminals with mega-ships. There are also intensive partnerships with ship operators, Carnival Maritime's Fleet Operations Center and the Grimaldi Group, for example. The NTC's services are financed by a number of terminals, including HVCC shareholders HHLA and Eurogate, as well as the Hansaport, Unikai and Cruise Gate Hamburg.

Routes for the around 250 major ships per month approaching Hamburg, for example from Gibraltar, are plotted automatically by specially customised software. Shipping companies provide the NTC with their coastal schedules so that the software can provide an ongoing target or an actual comparison. The NTC is also in direct contact with some of the previous ports to integrate them into NCT planning, in particular for estimated time of departure and outgoing draught at the previous port. Vice versa, the NTC then provides the same information of vessels in Hamburg to their next port of call. On the basis of this information, and in combination with the parallel planning of outbound ships with the partner terminals in Hamburg and the relevant environmental

data such as tide and wind forecasts, the NTC creates a precise plan for the passage of each shipping company's vessels, long before the vessel is on the Elbe approach.

This plan comprises recommendations in terms of speed and draught for transit towards Hamburg, as well as in-depth nautical and water-traffic-related data. Passage plans are updated in the event of changes and provided to the shipping companies. All information compiled by the NTC can be viewed in real time by the partner terminals via a terminal dashboard so that all stakeholders can work using the same data at the same time.

ADDED VALUE IN PORT PARTNERSHIP

The value added for stakeholders can be summarised as follows:

- Optimised approach for ships coming from the previous port. This minimises bunker costs for the shipping companies and improves their carbon footprint
- Terminal operators in the previous port in Hamburg and in the next port of call can optimise the use of their resources on the basis of a coordinated, consistent operational perspective. This also reduces costs and improves the carbon footprint of the terminal operator, and furthermore, the shift manager at the terminal can also focus on the processes, rather than having to also deal with issues related to coordinating water traffic
- The authorities can largely focus on their own function and on the execution of the current traffic situation
- Other stakeholders can also benefit from a long term, continuously-updated overview

SUMMARY AND OUTLOOK

After the launch of the HVCC, questions were often asked about the cost and benefit. With each passage plan produced by NTC or feeder coordinated within the Port of Hamburg by FLC doubts gradually subsided. A major prerequisite for the success of a project like this is the insight and readiness of terminal operators not only to adapt terminal hardware and infrastructure, but also to invest in process optimisation. HHLA and Eurogate recognised this necessity when they set up the FLC 13 years ago and are taking the next logical step with the NTC.

Meanwhile, a growing number of stakeholders is ready to share some of their data, consequently putting their individual interests on the back burner.

HVCC's aim is to extend the scope of collaboration further in the years to come. Therefore, HVCC want to integrate more terminals and carriers in the scope of planning, convince more stakeholders to participate and even collaborate with

competing ports. In a first pilot-project, HVCC started sharing data with the Port of Rotterdam, exchanging relevant operational data for vessels going from Hamburg to Rotterdam and vice versa, using a defined port call standard. Further, HVCC participate in the follow-up project of the Sea Traffic Management Project (STM) and put forward a project idea to explore the possibility of a data-sharing platform for all European ports.

Apart from these innovative ideas, HVCC also aims to establish partnerships and direct interfaces with shipping companies (mainliners, feeders and barge operators) for exchanging relevant data and passage plans. Further, HVCC, local authorities and pilots associations continuously working together to extend the scope of exchanging data, which is also a good example of collaboration between private and public bodies.

In this way, HHLA and Eurogate will continue to blaze a trail of innovation for digitization and vessel coordination not only in the Port of Hamburg.

ABOUT THE AUTHOR

Gerald Hirt served two years in the Navy, then studied seaborne transport and port management at the University of Applied Sciences in Oldenburg, graduating with a degree in industrial engineering. Following a period of training at the shipping company P&O Nedlloyd, he began his career with the HHLA Group at HPC Hamburg Port Consulting in 2003. Mr Hirt has been Operations Manager at HVCC since November, 2012. In this role he expanded the portfolio of services for the Feeder Logistics Center (FLC) and developed the Nautical Terminal Coordination (NTC). In June 2017, he became Managing Director of HVCC.

ABOUT THE ORGANIZATION

The Hamburg Vessel Coordination Center (HVCC) is a joint venture between the two container terminal operators in the Port of Hamburg, Hamburger Hafen und Logistik (HHLA) and Eurogate Container Terminal Hamburg (CTH). Terminals and shipping companies can make use of its operational coordination services for the arrival of ships in the Port of Hamburg, routes around the port and departure after handling - whether for container mega-ships, bulkers, cruise ships, feeders or inland vessels. Furthermore, HVCC acts as a central communication interface to the Hamburg Vessel Traffic Service Centre and the Elbe pilots.

ENQUIRIES

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