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« Range Nord, European leadership and functional diversity »

*The epicenter of European port operations, the **Northern Range** is a geographical concept stretching from Le Havre to Rotterdam. It encompasses core territories of the continent's economy: the isolated Parisian basin, the European "Blue Banana" extending from the Alps to the Delta (Rhine, Meuse, Scheldt), and the emerging zones of Eastern Europe. The footprint of the Northern Range extends far beyond its "natural" hinterland at the expense of Mediterranean gateways, raising the specter of a port behemoth due to its sheer scale and efficiency. In practice, everything operates on an **XL scale**: refinery complexes, dry bulk and automotive terminals, and, above all, the dimension of containerization. There remains, however, a sense of structural maturity within this port economy; greenfield infrastructure projects are increasingly rare, even though—as elsewhere—innovation is actively at work. The development of bioenergies stands out as the primary challenge. Finally, it must be kept in mind that the Northern Range is not a uniform bloc; each nation, and indeed each port, possesses its own distinct history and biotope, shaping its relationships with local territories and private corporations.*

European-style megaports

From the Seine estuary to the Elbe, each port has its own history, whether founded during the Middle Ages (Hamburg, Bremen, Antwerp, Rouen), the early modern era (Le Havre, Amsterdam, Vlissingen), or the 19th century (Rotterdam). To this historical diversity are naturally added the specific characteristics of their respective environments. Politically, this reflects the construction of the nation-state and the autonomy of local territories (municipalities and regions). Economically, it involves the organization of territories in connection with maritime trade, whether concerning northern France, the Benelux, the Rhineland, or northern Germany. With European integration, transeuropean connectivity has forged a highly competitive single market and opened up a near-continental hinterland to the East. Within the ports, following the era of colonial wharves and subsequent transatlantic liners, the emergence of oil in the 1930s and the growth of the post-war boom (*Les Trente Glorieuses*) enabled the development of industrial zones, which gave birth to a dense network of quayside refineries and steel mills¹. Consequently, oil², coal, and iron ore filled the tanks and storage yards of most ports. In return, processed commodities (fuels and steel products) naturally fueled port activity.

Ports have also undergone other structural developments. While export-oriented agribusiness remains primarily a French specialty—led by the grain-handling port of Rouen—the other gateways act as import hubs for grain and animal feed. In the 1960s, ferries established strong positions between Le Havre and IJmuiden (Amsterdam), and by the 1980s, massive dedicated terminals for car carriers reflected the internationalization of the automotive industry, a segment led today by Bremerhaven and Zeebrugge. In recent years, LNG has driven infrastructure developments, which are inherently linked to the proximity of the North Sea gas fields. Thus, to the long-standing site at Zeebrugge were added the terminals of Rotterdam and Dunkirk, ahead of the upcoming German facilities in Stade (Lower Saxony) and/or Brunsbüttel (Schleswig-Holstein).

Nevertheless, the defining feature that characterizes the Northern Range and gives it its status is containerization. At the core of this facade, the Delta duo—Rotterdam and Antwerp—exerts overwhelming dominance. To boost their performance, both ports capitalize on several structural advantages: locally, through the establishment of massive transeuropean logistics hubs operating across multiple scales with an extensive reach; by sea, acting as transshipment hubs serving a zone

¹ Ports also supply inland industrial sites that remain powerful within this part of the continent.

² Today, there are only three ports for crude oil—Le Havre, Rotterdam, and Wilhelmshaven—with pipelines to supply the refineries of the other ports.

from Spain to Iceland; and on land, leveraging the Rhine axis for Rotterdam and Antwerp's historical penetration into the French hinterland.

On the northern flank, the German ports of Bremerhaven and Hamburg capitalized on the fall of the Berlin Wall and Eastern European integration to expand their reach across the Baltic Sea and Central Europe. On the southern flank, French ports are locked in a perpetual struggle for market reconquest. Le Havre must not only reclaim market shares within the Île-de-France region but also break into the *Grand Est* and beyond. Dunkirk (much like Zeebrugge to the north) is working to carve out its own space, with the primary ambition of acting as a proximity regional gateway for the *Hauts-de-France* region.

To be clear, the sheer extent of the Northern Range—and even more so of its continental hinterland—completely contextualizes and relativizes the notion of port market share. Frequently analyzed in France from Le Havre's perspective, this market share is bound to appear unfavorable to the Norman gateway. The mouth of the Seine is highly peripheral compared to the core North European market and its extensions into Eastern Europe. It remains nonetheless true that Le Havre must win back container volumes within its domestic market. The port struggle is, first and foremost, a French one. It is fought through inland waterway intermodality along the Seine axis and via rail further east. If there is one common feature shared by Northern Range ports, it is the role of rail transport in penetrating deep into the heart of the continent.

Major engineering works

Since the arrival of the first container ship in 1966 at Rotterdam and Bremerhaven, the Northern Range has been an ongoing construction site. Capacity had to be built, and built repeatedly. The reclamation of the Maasvlakte land (originally dedicated to a steel mill project that never materialized) provided Rotterdam with a significant head start through its Delta Terminal. This was followed by the rapid, tidal (*à marée*) terminals of Antwerp and Le Havre. At the turn of the century, faced with relentlessly growing vessel sizes and surging traffic volumes, the Dutch, Belgians, and French wagered heavily on massive deepwater sites. This led respectively to Maasvlakte 2 in Rotterdam, Deurganckdok in Antwerp, and Port 2000 in Le Havre. On the German side, Bremerhaven completed its capacity extensions, Hamburg constructed the Altenwerder terminal, and the Lower Saxony region developed a greenfield terminal at Wilhelmshaven (JadeWeserPort)³.

Maasvlakte 2 stood as the largest European port infrastructure project, virtually doubling the capacity of the Dutch gateway. Upon its completion in 2015, the vast area reclaimed from the sea was equipped with two automated terminals (2.7 million TEUs of capacity), and the next phase will deliver an additional 4 million TEUs of capacity by 2024. In the capacity arms race, the Dutch lead will then be extensively wide.

The Antwerp port community has had to bridge its capacity gaps from the very beginning. Today, a massive new tidal dock is projected on the left bank of the Scheldt. In its latest design, the Saeftinghedok will branch out from the Deurganckdok baseline. The exact timeline remains fluid, and in the interim, smaller incremental expansions here and there are used to scrape together some extra capacity, with the goal of gaining 7 million TEUs over the decade. Furthermore, the Port of Antwerp must constantly coordinate with its Dutch neighbors, whether regarding the draft clearance of the Scheldt for mega-container ships or the unfulfilled ambitions of a port terminal at Vlissingen⁴.

On the German flank, there is little spatial room left for heavy expansion. Bremerhaven is fully completed, and efforts are focused solely on deepening quayside drafts. The greenfield terminal at Wilhelmshaven opened in 2012 but struggles to find its market due to its geographic peripherality. Hamburg shelved its project for an entirely new container terminal, choosing instead to focus on 2019 dredging works that increased the depth of the Elbe shipping channel, thereby enhancing accessibility for ultra-large vessels carrying optimized container loads. Systematic terminal automation represents the alternative pathway to unlock capacity by maximizing spatial productivity.

³ The Land of Bremen is involved but wishes to divest, faced with a lack of prospects and the maintenance costs of a terminal that only processes around 0.5 million TEUs per year.

⁴ The region counts two somewhat different projects, costing nearly one billion euros each, to be completed in 2023: the new giant locks of Terneuzen leading toward Ghent, and of Zeebrugge leading toward the inland port.

In France, Port 2000 is nearing its definitive completion in terms of layout and direct inland waterway accessibility⁵ via the "chatière" bypass channel. For a certain period, the capacity of the Norman gateway is properly adjusted to the French domestic market. There as well, automation will eventually represent a way to gain capacity without further civil engineering works. The opposite choice was made in Dunkirk, which is backing a medium-term macro-project to create heavy capacity, aiming to challenge its Belgian neighbors within the immediate hinterland and toward the Grand Est region. For now, the Cap 2020 project remains in its initial phases, and its concrete implementation is still a distant horizon.

Terminals: Who does what?

As is well known, the control of port terminals is one of the pivotal battlegrounds of the container industry, driven by ocean carriers' need for dedicated gateways and global terminal operators' push to internationalize their footprints. From the perspective of the latter, the dynamics are straightforward. In the 1990s, the financial exhaustion of local stevedores allowed PSA (Singapore) to anchor itself in Antwerp and HPH (Hutchison Ports, Hong Kong) in Rotterdam. DP World's presence stems from several origins: the acquisition of P&O Ports in Antwerp, its corporate shareholding in Ports Synergy in Le Havre, and its direct involvement in one of the Maasvlakte 2 terminals in Rotterdam. On the German side, Eurogate (a joint venture of BLG and Eurokai) controls facilities in Bremerhaven, Wilhelmshaven, and a share of Hamburg, while HHLA holds the remainder of the Elbe port. To this panorama, one must add the Perrigault company in Le Havre, operating independently and in joint ventures with MSC.

Among ocean carriers, Maersk pioneered the movement in Rotterdam in 1984, now operating the sole giant site on Maasvlakte 2. The Danish giant is also anchored in Bremerhaven to serve the German and Scandinavian markets. This stands alongside one of MSC's three strategic hubs, together with Antwerp and Le Havre. CMA CGM is naturally rooted in Le Havre and Dunkirk, while holding minority stakes in Antwerp and Rotterdam. Hapag-Lloyd, which retains a stronghold at Hamburg's Altenwerder terminal, recently acquired a 30% stake from Maersk in Wilhelmshaven. Finally, COSCO purchased the terminal at Zeebrugge while securing minority shares in terminals across Antwerp (with DP World), Rotterdam (with Hutchison), and since recently, in Hamburg (with HHLA).

Operations lacking uniformity

Belgian, Dutch, and German ports are characterized by robust local and regional oversight. In Germany, this is driven by the federalism of the Länder, and in Belgium and the Netherlands, by the long-standing heritage of municipal port ownership. France differs sharply with its deep-seated tradition of State-controlled ports⁶, a model also found in Italy and Spain. While this centralized approach enabled the rapid rollout of industrial port zones (ZIP) and the infrastructure surges required for containerization, it has also been perceived as a structural handicap, as an overly bureaucratic state framework often lacks the commercial agility demonstrated by the Delta ports.

In Germany, the Länder of Bremen and Hamburg have remained fiercely "Hanseatic"; port operations and maritime trade have been the pillars of their economies since the Middle Ages. The regional states have funded and managed their gateways since the mid-19th century, to the point of remaining directly embedded within the terminal operating companies. In practice, a structural nuance exists: the Hamburg Port Authority has operated under the German legal status of a public-law institution since 2005, keeping it within the direct sphere of the regional State, whereas Bremenports, established as a limited liability company (GmbH) since 2002, enjoys greater operational autonomy. The Land of Lower Saxony chose a similar corporate path for its Niedersachsen Ports structure, which oversees seven gateways, including Stade, Wilhelmshaven, Emden, and Cuxhaven.

Conversely, Zeebrugge has a different history; initiated by the State in the 1970s, it was regionalized in 1986. However, everything changed between 2018 and 2021: Ghent decided to merge with the Dutch port operator Zeeland Seaports (Vlissingen–Terneuzen) to form North Sea Ports, while Antwerp and Zeebrugge are joining forces to form a single unified gateway.

On one hand, this reflects the geographical cohesion of both banks of the Scheldt estuary, grouping intermediate ports operating within market niches; on the other hand, it triggers the creation of a massive

⁵ The last two berths were awarded in 2019 to GMP, under the influence of CMA CGM and DP World, for an operational opening in 2022.

⁶ Totally dedicated to ferry traffic, Calais is not, strictly speaking, a port of the Northern Range.

port complex—both oceanic and estuarine—capable of challenging its Dutch neighbors. These port consolidations are executed through the creation of new port corporations whose shares are distributed among the various local territories. For North Sea Ports, the public limited company's (*société anonyme*) shareholders are the Province of Zeeland and East Flanders, alongside the various municipalities linked to the port area, led by Ghent. The future Port of Antwerp-Bruges, structured as a limited liability company, will feature a capital structure shared between the two municipalities of Bruges (19.8%) and Antwerp (80.2%). The fourth Belgian port, Ostend, remains municipally owned under the status of a public-law corporation, with its current operations heavily centered on marine renewable energies.

In the Netherlands, the two major ports of Rotterdam and Amsterdam are municipally driven at their core. In 2004 and 2013, they were transformed into public limited companies (*société anonyme*), but with ownership residing solely with the municipality for Amsterdam, and with a State shareholding (29.2%) for Rotterdam—the price of The Hague's financial commitment to the construction of Maasvlakte 2. A merger of the two ports was envisioned in 2010 but has yielded no results to date. The creation of a Dutch mega-port will likely resurface regularly in the future.

In the 1960s, France chose to establish only a handful of State-managed ports; the reforms of 2004 and 2008 consequently left a status of Major Sea Port (*Grand Port Maritime* — GPM) for some, and territorial regional ports for others (such as Calais and Boulogne). The major breakthrough of 2021 is the unified fusion of HAROPA, merging the GPMs of Rouen and Le Havre with the Autonomous Port of Paris. The consolidation of these Seine-Maritime ports aligns seamlessly with their respective geographical positions and cargo complementarities. While these port cities harbor long-standing historical rivalries, it is not a matter of subordination, but rather of operational synergy.

Governance frameworks

There is a lingering perception in France—a country accustomed to State-controlled ports—that governance across the Northern Range is more open, inherently more decentralized, and grants greater space to the private sector within decision-making bodies. It is therefore essential to clarify this configuration. We can distinguish four primary groups: representatives of the supervisory state and local territories (T&T), representatives of the local economic community (CE), qualified independent personalities derived from the business and academic worlds (PQ), and personnel representatives (RP). What is striking is the non-representation of the port business fabric within the governance boards. Bremen's governance grants only two seats to the economic community, featuring a representative from the Chamber of Commerce and Industry (CCI) and the president of the port's advisory board, which is composed of around fifteen local professionals. The ports of the Northern Range are therefore not governed by a seamless osmosis between the private and public sectors. Political oversight by local territories remains strong, with the notable exceptions of Amsterdam and Rotterdam, which operate with restricted boards composed of appointed figures derived from the wider economic world with no direct ties to port businesses.

There is consequently no single Northern Range model that can be applied as a panacea for good governance. Compared to France, ports are historically bound to their cities through municipal autonomy in the Benelux and within the Hanseatic *Länder* in Germany. Port operating companies and even their professional associations are excluded from governance frameworks everywhere to prevent conflicts of interest. In fact, private interests are channeled implicitly within the local context through employers' organizations toward liberal and conservative political parties, just as progressive parties have historically maintained close ties with trade unions. The social context of the port and the political context of the city share a diffuse bond that is only made possible by the municipal status of the port, allowing all parties to apply the art of compromise characteristic of Northern Europe.

The French model is inherently different. It is inherited from the autonomous ports framework established as early as 1925 in Le Havre, featuring a sharp separation of State ports from the local political and economic fabric. The *Grands Ports Maritimes* (GPM) are State ports, and their governance offers only a "right of review" (*droit de regard*) to local territories, but under no circumstances a genuine co-governance. This will perhaps be the core focus of the next port reform, especially as French ports are increasingly integrated into broader regional frameworks through axis strategies.

The debate surrounding the presence of the private sector can be settled by the European demonstration that port companies are excluded from governance everywhere. However, in France, it would appear intelligent to include the presidents of maritime unions within the supervisory boards. This layout used to exist within the boards of directors of the former Autonomous Ports and, by way of

comparison, is currently the case within Spanish ports. Together with the presence of the CCI president, the local port fabric would find a fair representation with two members. As for the representation of employees, it remains entirely unknown in the Benelux, but is strong in Germany and legally guaranteed in France.

The Northern Range is a geographical space that derives its coherence from its economic role for a large share of the European hinterland. Finding a common model is impossible because there are clearly three distinct operational approaches. To the north sits the German Hanseatic model, featuring a decisive role for the two port *Länder*, extending down to direct corporate shareholdings in terminal operating companies. The Delta model is more difficult to define, given the deep differences among the four major ports following recent mergers. Finally, the French model, operating under a seal of frustration, has long attempted to unlock the winning formula—undoubtedly overlooking the fact that it is geography that dictates a large portion of port performance, and that the keys to success lie in the mastery of logistics space, inland ports, and rail services.

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