



# Logistics cluster at duisport in the 21st century

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# Duisport and some keyfacts

Duisport, also known as the Duisburger Hafen AG, has developed to one of the biggest inland ports in Europe.<sup>1</sup>

But digital technologies are changing logistics rapidly and in unpredictable dimensions. In order to remain competitive, duisport has to develop further and include new business areas as well as start-ups.<sup>2</sup>











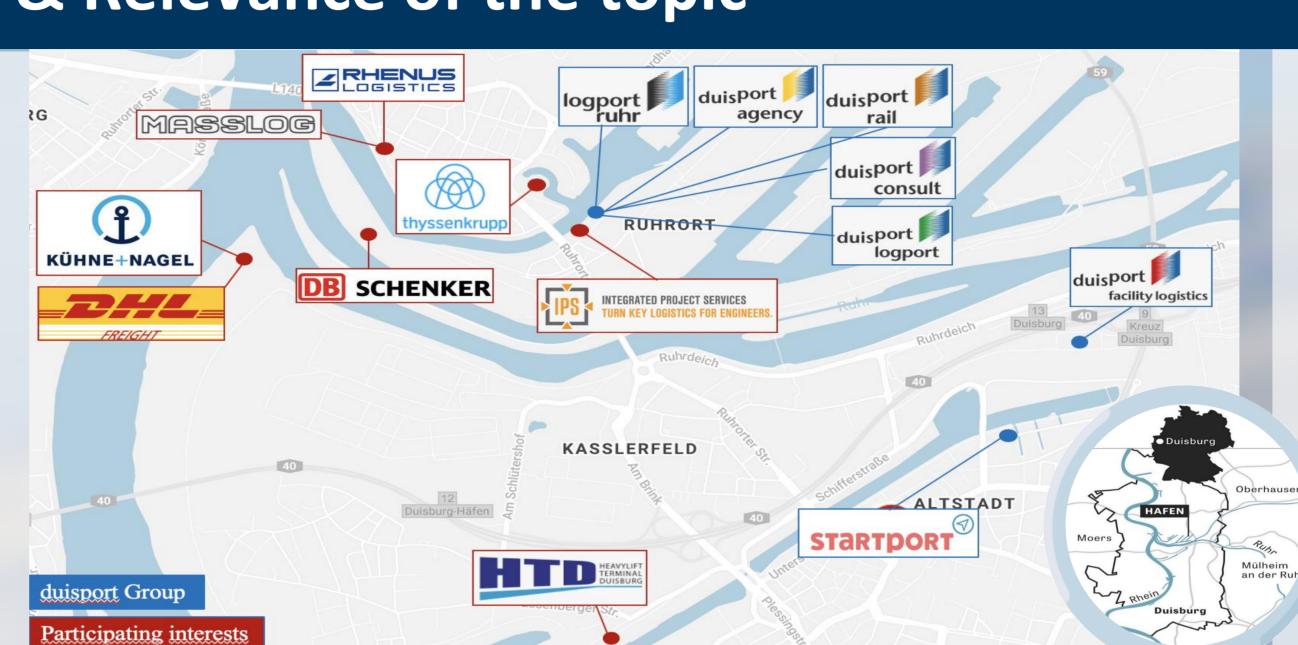




# Region & Relevance of the topic

#### SWOT<sup>3</sup> analysis for the Port of Duisburg:

- Advantageous geographical location First-class site conditions with comprehensive logistics know-how Duisport is an innovation center for logistics issues
- Not enough direct calls duisport is dependent on calls from feeder ports like Rotterdam
- Access to new markets with 'logport'
- Optimal connection via water, air, rail or road
- Network effects due to the central location of the logistics centres
- Recession of the economy and significant declines in trade volume due to the corona pandemic
- Road and bridge problems River dams can break



→ Cluster is formed thematically – logistics emerges as a core segment in the port of Duisburg<sup>4</sup>

→ Formation helps to individually promote start-ups and bring them together with the right industry experts





# What do start-up initiatives contribute to the duisport cluster? An analysis and outlook.

#### **Theoretical Foundation**

#### Regional Cluster

- Clusters = non-random geographical agglomerations of companies with similar or complementary capabilities.<sup>5</sup>
- In Germany clusters are often located in small and mediumsized towns.6
- Public and/or private institutions are in place to provide training, R&D and other support services.<sup>7</sup>
- The interrelationships within the cluster between the individual actors are the central element of a cluster.8
- Knowledge spillover through clusters and also strengthening of region and its structural organization.9

#### startport GmbH

- In general, start-ups are rapidly growing and expanding types of companies. These are usually very innovative companies where the founders try to create a new product or services.
- Goals of a start-up: To solve or simplify problems for which there is no solution through new products or services. 10
- There are several risks and complications for a new company → To ease these entry difficulties, start up initiatives offer help.<sup>11</sup>
- Startport is one start-up initiative based at the port of Duisburg and founded with partners from industries.
- Startport promotes innovations of partner companies through exchange and joint projects with start-ups.<sup>12</sup>

### Analysis



**Industries** 

The Porters Diamond Model:

The Diamond Model by Porter tries to explain the competitive advantage of firms in a specific geographical area. This depends on four interrelated attributes - "Factor (Input) Conditions", "Context for Firm Strategy and Rivalry", "Demand Conditions" and "Related and Supporting Industries". Two additional variables can have influence on the environment of competitive advantage within clusters: "Chances" and "Government" policies. 13 "Factor conditions" contain humans, capital, natural resources as well as infrastructure. "Firm strategy, structure and rivalry" force companies to produce innovations and enhance their productivity. Their interest to the industry's products or services characterize the "Demand Conditions". Finally, "Related and Supporting Industries" facilitate the transfer of knowledge among companies and enhance productivity. 14 The role of "Government" is trying to influence at the microeconomic level by improving growth of existing and emerging clusters. 13 "Chances" give the opportunity to reveal random discoveries. 15

## Methodological Approach

- Primary Source:
- > Semi structured expert-interviews with duisport, startport and a start-
- → Qualitative Research

**STARTPORT** 

⊌ idea-ly

- up which is in cooperation with startport

Secondary Source:

→ Databases and statistics (Statista)

# Outlook for duisport & startport

- Innovative megatrends for the logistics industry: e.g. autonomous driving, hydrogen, 3D printing  $\rightarrow$  adapt, act, be a pioneer
- Extending the cluster policy to attract new businesses
- Focusing on full-service provision
  - 1. Expansion across the entire Ruhr area
  - 2. Offering of encompassing digital solutions
  - 3. Support for small- and medium sized enterprises during digitization

#### In relation to duisport:

Chance

**Factor** 

Conditions

Firm strategy, structure and rivalry

Existing networks, e.g. with research institutions, international presence, and a good location (Rhine, motorway, metropolitan area) underline duisport's corporate strategy and contribute to productivity. 16

**Factor conditions** 

For start-ups, existing experience, technologies and know-how accompany faster and more cost-effective development of new products. 17 Related and support industries

The collaboration and cooperation with well-known energy suppliers from the Ruhr Area (RWE, innogy) and research institutions promote innovation and future ideas. 16 In a closer regional exchange of explicit and implicit knowledge, start-up initiatives are able to contribute to the competence building of the participating companies and thus to strengthen regional competitiveness.<sup>18</sup> Demand conditions

All top 10 companies in the logistics sector are located at Duisburg Port. Demand conditions and developments are significantly influenced. 16 Chance

Further pilot projects with existing energy companies at duisport will further strengthen the innovative power and uncover potential for logistics. 16 In general, a good region for start-ups can be defined by the structural factors of the local economy and by the demand for the products and services, these prerequisites are fulfilled at duisport. Further on existing products and services innovation potential at duisport are offering a value added which is important to strengthen the location and cluster. 19

Government In order to strengthen Duisburg as a location, it's innovation and adapt to changes, the state has to exert influence and support the promotion of its potential.<sup>20</sup>

#### Central outcome:

In general, the logistics sector is characterized by low margins, which represents a risk. Only "big companies" (e.g. Schenker and DB) have the financial power to drive change, innovation and digitalization. The exchange of information in a closely interwoven regional environment has the additional effect of increasing competitive pressure. This initially appears to be a disadvantage, but in competition between regions it can become the key to success. This effect creates good conditions for the settlement of other companies, cluster effect and policy for future development. In addition, "innovative milieus" and "cooperative networks" such as startport can emerge within clusters, which sustainably support and accelerate innovation and change and enable the emergence of start-ups.<sup>21</sup> In conclusion, duisport combines good prerequisites at its location to shape trends and drive further developments. Startport additionally strengthens and supports the duisport cluster. Innovative solutions are integrated, and future competition in changing times can be successfully contested.

#### References

1 Staake, E. (2014): Wettbewerbsfaehigkeit und Innovation als nachhaltiges Erfolgsrezept, in Internationales Verkehrswesen. (2015) (Hrsg.) Vol. (66) No. 1, pp. 6-54. 2 Startport GmbH (2019): Konzept. https://startport.net/konzept/; aufgerufen am 31.05.2020. 3 Duisport (2020): Coronavirus, on: https://www.duisport.de/coronavirus/ (retrieved on 25.06.2020)/ Duisport (2019): Weiter Denken, on: https://www.duisport.de/wpcontent/uploads/2019/11/duisport\_Unternehmensbroschuere\_2015\_DE.pdf (retrieved on 25.06.2020)/ Duisport (2017): Wandel – Duisport gestaltet die Zukunft; Geschäftsbericht 2017, on: https://www.duisport.de/wp-content/uploads/2018/08/duisport\_GB\_2017\_DE\_web\_k.pdf (retrieved on 25.06.2020) / Duisport (2020): Industrieflächen & Logistikimmobilien, on

https://www.duisport.de/kompetenzen/industrieflaechen-logisitkimmobilien/ (retrieved on 25.06.2020) 4 KETELS, CH. (2004): Motoren für die Region. Cluster-Experte Christian Ketels im Gespräch. In: Unternehmen Region, Ausgabe 2 2004, Berlin

5 Cluster Richardson, G.B. (1972): The organisation of industry. Economic Journal 82: 883-896. Ellison, G. and Glaeser, E.L. (1994): Geographical Concentration in the US Manufacturing Industries. A Dartboard Approach. Working Paper no.:4840, Cambridge, Mass.: National Bureau of Economic Research (NBER 6 Porter, M (1996): Competitive Advantage, Agglomeration Economies and Regional Policy, International Regional Science Review 19. 1 & 2: 85-94 7 VAN DER LINDE, C. (2005): Cluster und regionale Wettbewerbsfähigkeit. Wie Cluster entstehen, wirken und aufgewertet werden. In: Cernavin, O.; FÜHR, M.; KALTENBACH, M.; THIEßEN, F. (Hrsg.) (2005): Cluster und Wettbewerbsfähigkeit von Regionen. Erfolgsfaktoren regionaler Wirtschaftsentwicklung. Volkswirtschaftliche Schriften, Heft 543. Berlin

8 Grabow, B. (2005): Weiche Standortfaktoren in Theorie und Empirie - ein Überblick. In: THIEßEN, F.; CERNAVIN, O.; FÜHR, M.; KALTENBACH, M.(Hrsg.) (2005): Weiche Standortfaktoren. Erfolgsfaktoren regionaler Wirtschaftsentwicklung. Volkswirtschaftliche Schriften, Heft 541. Berlin. 9 Kiese, M. (2017): Regional cluster policies in Germany: challenges, impacts and evaluation practices, in: Springer Science + Business Media (Hrsg.), New York.

10 Peráček T., Mucha B., Brestovanská, B., Kajanová, J. (2018): Simple company on shares as startup support tool. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 66(6), 1601-1611. 11 Duisburger Hafen AG (2020a): Unternehmen. https://www.duisport.de/unternehmen/; aufgerufen am 31.05.2020. 12 Startport GmbH (2019b): Konzept. https://startport.net/konzept/; aufgerufen am 31.05.2020.

13 Porter, M. E. (2000): Location, Competition, and Economic Development: Local Clusters in a Global Economy, in: Economic Development Quarterly (Hrsg.) Vol (14) 1, pp. 15-34. 14 Saric, S. (2011): Competitive Advantages through Clusters (An Empirical Study with Evidence from China), Darmstadt.

15 Brouthers, K. D. & Brouthers, L. E. (1997): Explaining National Competitive Advantage for a small European Country: a Test of Three Competing Models, in: Inter-national Business Review (Hrsg.) Vol. (6) No.1, pp. 53-70. 16 Garbar, A. (2020): Interview duisport. (25.06.2020) 17 SCHMIDT, A. (2007): Co-Opera – Kooperationen mit Leben füllen. Ein multiperspektivischer Blick auf die Entwicklung von Unternehmenskooperationen innerhalb von Clustern und Netzwerken. Heidelberg. 18 BIEGER, T.; SCHERER. R. (2003): Clustering und integratives Standortmanagement – von einem theoretischen Konzept zu konkreten Handlungsstrategien. In: BIEGER, T. (Hrsg.): Clustering – das Zauberwort

der Wirtschaftsförderung. Bern. 19 Franke, J. (2020): Interview startport. (17.06.2020). 20 Schmalstieg, N. (2020): Interview start-up Idea.Ly. (25.06.2020). 21 THIEßEN, F. (2005): Weiche Standortfaktoren - die fünf Sichtweisen. In: THIEßEN, F.; CERNAVIN, O.; FÜHR, M.; KALTENBACH, M.(Hrsg.) (2005): Weiche Standortfaktoren. Erfolgsfaktoren regionaler Wirtschaftsentwicklung. Volkswirtschaftliche Schriften, Heft 541. Berlin.

Maßnahmenfeld "in die Praxis" **Seminar: Regional Innovation** 

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