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Contributing Authors

Name	Organisation	Email
Eva Jung	FHOO	Eva.Jung@fh-steyr.at
Johanna Freiberger	FHOO	Johanna.Freiberger@fh-steyr.at
Veronika Haszilló	ICG Ex Ante Consulting Ltd.	haszillo@icg-exante.hu
Zoltán Barna-Lázár	ICG Ex Ante Consulting Ltd.	barna@icg-exante.hu
Monika Thury	HFIP	popeiproject@gmail.com
Snezhina Alexieva	BPICo	s.alexieva@bgports.bg
Werner Auer	EHOO	w.auer@ennshafen.at
Karin Kainzinger	EHOO	k.kainzinger@ennshafen.at
Marian Timler	PoV	Timler@hafenwien.com
Saša Jovanović	iC	S.JOVANOVIC@ic-group.org

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1 Scope of the document

The business strategies applied by the inland cargo ports in the Danube Region are the scope of this document and how efficiently they are implemented are related to the port management models employed all along the river. **When we use the term of 'ports' in this document, it only means the inland cargo ports in the Danube Region. If a port is both maritime and inland cargo port, the activities shall be split between the inland and maritime port functions.** In order to ensure a balanced development of the Danube port sector and enable it to become a key element in the EU transport network, first there needs to be a clear analysis performed in regard to the status-quo. This activity will deal with this topic by first assessing the current practices in the Danube region on the port management and operation models applied and providing for a SWOT analysis thereof. In order to present the port management models of European ports, the key definitions of port operation should be presented as follows.

1.1 General terms

In the context of the port management models of Danube cargo ports, the key definitions of port operation should be understood as follows according to the Commission Regulation (EU) 2017/1084 of 14 June 2017 as regards aid for port and airport infrastructure.

1.1.1 Port and infrastructure / Definitions

Port

'Port' means an area of land and water made up of such infrastructure and equipment, so as to permit the reception of waterborne vessels, their loading and unloading, the storage of goods, the receipt and delivery of those goods and the embarkation and disembarkation of passengers, crew and other persons and any other infrastructure necessary for transport operators in the port.

Inland port

'Inland port' means a port other than a maritime port, for the reception of inland waterway vessels.

Port infrastructure

'Port infrastructure' means infrastructure and facilities for the provision of transport related port services, for example berths used for the mooring of ships, quay walls, jetties and floating pontoon ramps in tidal areas, internal basins, backfills and land reclamation, alternative fuel infrastructure and infrastructure for the collection of ship-generated waste and cargo residues.

1. **Privatization:** Process of incorporating the private sector into the port operations, administration and investments.
2. **Concession**: Rent or leasing of existing facilities, equipment and infrastructure along with the right to grant services using those assets, and the right to charge for those

services. This includes the commitment to make specific investments to improve the quality and amount of those services in a long-term period.

3. **Canon**: Cost to the private agent by the use of facilities or services.
4. **Tariffs**: fee charged to the users of the harbour facilities, for the utilization of the ports services.
5. **Employment agency**: Database that contains personal and professional information of capable people to carry out a determined task and that it can be consulted by the employers according to their necessities.
6. **Stevedore Company**: is a company in charge to carry out the port operations of manipulation of the merchandise. Generally, it holds an administrative concession granted by the corresponding port authority, which authorizes to use, with exclusive character, a space located at wharf edge.

Port superstructure

'Port superstructure' means surface arrangements (such as for storage), fixed equipment (such as warehouses and terminal buildings) as well as mobile equipment (such as cranes) located in a port for the provision of transport related port services.

2 Introduction of the Port Management Models

Main actors of port management and operation

The definitions related to ports might differ from country to country. Thus, the following definitions were changed or edited for Austria if applicable.

Port owner

'Port owner' of a (public) port shall mean the owner / trustee of the port area. The area of a national public port shall be owned by the state or managed by a trustee company established by decisive state majority. There are also private ports.

Port manager

'Port manager' of a port shall mean a business company or organization responsible for keeping the entire port in a state suitable for proper operation, as well as for the coordinated operation and development thereof – as owner of the port in case of a public. Port managers' tasks shall be as follows:

- Tasks of operation, including:
  - organization, operation, and management of port logistics activities;
  - organization, operation, and management of services operations within the port;
  - operation, upkeep, maintenance, and renovation of port facilities as specified in the contract;
  - completion of environment protection tasks in the port;
  - organization and operation of the logistics / information system of the port;

- Completion of tasks related to utilization contracts;
- Performance and management of development tasks, with particular regard to drawing up the principles of further port developments;
- Completion of marketing tasks.

The port managers may also own superstructures within the port area.

Port operator

A (public) port is most often operated by a business company. The 'port operator' shall be the owner of the floating establishment / port, and any party entitled to operate such floating establishment / port by contract or on any other title. In our wording, this may include the port owner, the port managers, as well as the port operators of the (public) port.

Public and Private Participation in Austrian ports

In the following section of this report the volume of cargo transhipped waterside in Austrian ports is described. In Table 1 it can be seen that, , most cargo was transhipped in the port of Linz in 2016 – including cargo transhipped in the company port of voestalpine and in the port owned by Linz AG. In total, 7.5 million tons of cargo were handled waterside in 2016 in Austrian Danube ports and transhipment sites. Most cargo was transhipped in the company port of voestalpine in Linz (about 3.3 million tons), followed by other private ports and transhipment sites in Austria[1] with a volume of 1.4 million tons (18.6% of total volume of goods handled in 2016). The port of Vienna accounted for 14.2% of total waterside transhipment in Austria with a volume of around 1.1 million tons. The Ennshafen port accounted for 8.0% of the total volume of goods handled (about 600,000 tons of cargo) and the port of Krems accounted for 6.2% (about 470,000 tons of cargo). The general downward trend of goods handled on waterside was reversed in 2016 due to more favourable water conditions leading to an increased use of inland waterway transport.[2]

Table 1 - waterside transhipment in Austrian ports in 2016 (in tons)[3]

Cargo Type	Vienna	Linz	Krems	Enns
Agricultural and forestry products	79,127	842	25,149	130,065

[1] Aschach, the heavy cargo port at Linz, Mauthausen, Ardagger, Pöchlarn, Pischelsdorf, Korneuburg and Bad Deutsch-Altenburg. This category is not mentioned in 1.Table.
[2] Source: Viadonau: Annual Report on Danube Navigation in Austria (2016), p.16f; available under http://www.viadonau.org/newsroom/publikationen/broschueren/?jumpurl=fileadmin%2Fcontent%2Fviadonau%2F01Newsroom%2FDokumente%2F2017%2FBroschueren%2FJahresbericht_2016_en.pdf&juSecure=1&mimeType=application%2Fpdf&locationData=267%3Att_content%3A288&juHash=bd4d8921cb0433ddc11be0774e666a0b9909a5a0 [15.11.2017]
[3] Source: Statistics Austria, 2017, Available under: https://www.statistik.at/wcm/idc/idcplg?IdcService=GET_PDF_FILE&RevisionSelectionMethod=LatestReleased&dDocName=021957

Food and feed products	30,410	-	28,443	175,659
Solid fuels	-	83,976	1,973	716
Petroleum products	841,727	291,879	-	-
Ores and metal waste	12,810	2,399,737	6,585	497
Metal products	85,615	585,986	49,392	38,136
Raw materials, building materials	7,599	183,636	264,589	149,239
Fertilizers	8,112	420,697	81,015	93,116
Chemical products	-	1,487	-	2,428
Machines, vehicles, other products	2,130	26,439	10,208	6,210
total	**1,067,530**	**3,994,679**	**467,351**	**596,066**

As can be seen in the table above, the Danube is an important transport route for the company voestalpine Stahl GmbH.[4] Voestalpine is specialized in high-quality products and system solutions based on steel and other metals for technology-intensive industries and niches such as automotive, consumer goods industries or oil and gas industries.[5] Around one third of inbound goods, raw materials (especially iron ore) and 10% of outbound finished goods from voestalpine Linz are transported on the Danube. This is mainly because of the loading capacity of inland vessels, which is much higher than for trucks (around 25 tons). Especially finished goods such as strip steel or heavy plates, produced in Linz, are transported by inland vessels. In addition, the Danube is an important transport route for voestalpine in order to avoid dependency from railways.[6] Thus, the company port of voestalpine is an important private port in Austria. The port is of high importance to promote an increased use of inland waterway transport on a national and international level.
In the non-private port sector, the Port of Vienna can be named as the largest port on the Danube in Eastern Europe and the largest trimodal hub in Austria (connecting rail, road and inland waterway).[7] Even though only 1.1 million tons of cargo were transhipped waterside in the port of Vienna, in total 6.8 million tons of cargo were transhipped in the port of Vienna in 2016.[8] This means, that only around 10% of the total cargo transhipped at the port of Vienna

[4] Source: V. Steininger: The Danube as a transport route for voestalpine in Linz (2014); available under https://www.voestalpine.com/blog/en/innovation-en/danube-transport-route-voestalpine-linz/ [15.11.2017]
[5] Source: http://www.voestalpine.com/group/en/group/overview/ [15.11.2017]
[6] Source: V. Steininger: The Danube as a transport route for voestalpine in Linz (2014); Available under https://www.voestalpine.com/blog/en/innovation-en/danube-transport-route-voestalpine-linz/ [15.11.2017]
[7] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)
[8] Source: http://www.hafen-wien.com/de/home/unternehmen/zahlen-daten [15.11.2017]

was transhipped waterside, the rest belongs to land-to-land transhipment. The port of Vienna can be seen as an important logistics location for Eastern Austria. For Western Austria, the Ennshafen port can be named as an important trimodal hub and the largest connected industrial area on the upper Danube - combining business park areas with the port area.[9] In addition to around 600,000 tons of cargo transhipped waterside, 305,891 TEUs were handled in 2016 in the Ennshafen port.[10]

In conclusion, even though the most cargo was transhipped waterside in the private company port of voestalpine, non-private ports also play a pivotal role for Austria from an economic and a logistics point of view. The Ennshafen port as well as the port of Vienna are important trimodal hubs in Eastern and Western Austria, which facilitate transhipment of different types of cargo.

Port authority/Port Manager

The 'port authority' or 'port manager' is the organisation responsible for the planning, authorisation, coordination and control of services within the port. In some instances, the 'port authority' or 'port manager' also provide services.

The port landlord is the entity that owns the land on which the port is constructed and will usually own the essential infrastructure (e.g. the quays and breakwaters) as well. The port landlord is the entity practising the ownership rights: therefore, it is the owner itself or somebody entitled by the owner. Typically, the port authority is also the port landlord, although the landlord may be a separate entity.

Port service providers/Port operators

In order to use a port, a range of intermediary services is often required, which can be provided by the port itself or by independent intermediary parties.

- Towage is a service provided by tug boats which move larger ships that either should not or cannot power themselves.
- Cargo-handling involves the movement of cargo in and around a port. This includes marshalling services (the receipt, storage, assembly and sorting of cargo in preparation for delivery to a ship's berth) and stevedoring services (the loading of cargo onto and discharging cargo from ships).

E- customs, digitalization and automation

There are currently no general E-customs systems implemented in Austrian ports. In addition, the topic of digitalization and automation is currently not very present in Austrian ports compared to other best practices in the Rhine-region (e.g. Duisport). However, in the port of Vienna for example, goods are registered by customs service in a digital format in terms of a customs warehouse. These data are also shared at some point with the port authority. The e-

[9] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)
[10] Source: EHG Ennshafen GmbH, 2017, Fact Sheet Ennshafen Port. Available under http://www.ennshafen.at/files/facts_ennshafen-aktuell-e.pdf [15.11.2017]

customs process works like a standard warehouse management system. The interface between the warehouse management system and the E-Customs system is currently optimized. As a result, the port of Vienna is able to declare goods, lock them in the system in case of problems, or carry out inspections with the customs office during a customs inspection.

Information sharing platforms, port communication & information exchange

There are currently no information sharing platforms available in Austrian ports. However, within the DAPhNE project in Activity 5.3 four pilots are foreseen to test such information sharing platforms. A study trip will be organized to a Rhine port with an existing Port Communication System (PCS) for the purposes of best practice research. Following the Danube-specific adaptation of know-how on the basis of data provided by the four ports involved in the pilot implementation (Enns, Bratislava, Novi Sad & Smederevo) a modular PCS system (including technical and functional specification) consisting of different modules will be elaborated. This platform will enable a step-wise and customized approach for ports within the DAPhNE project as well as after project lifetime, enabling all other Danube ports to utilize the elaborated platform due to its modular approach. Thus, development costs an international PCS may be reduced and the sustainability of project results is supported. Some of the modules for which a model architecture will be elaborated are: traffic monitoring, automatic cargo type and quantity detection, berth allocation, storage allocation, automatic billing, automatic statistics as well as interfaces to other transport modes. The pilot implementation in the four ports will include the development, implementation and operation of the PCS modules traffic monitoring, berth allocation/statistics module. In course of the demo phase - which will last at least three months - users will be using the system at the ports and collect analytical operational data. The feedback from the PCS users will be reflected in a monitoring report. Pre-feasibility studies will be conducted based on the PCS specifications.

Port users

A wide range of customers make use of ports, including freight shippers, ferries, cruise ship operators and private vessels. Depending on the specific port, users may access different parts of the port.

End-customers

The ultimate users of port services are passengers or freight customers who consume a good that has been shipped through a port. Freight forwarders are companies that specialise in arranging shipping services for their customers and thus act as intermediaries to the ultimate consumers of the freight goods. The area in which these customers are located is known as the port hinterland.

In order to better understand the particularities and specialties of different port management and operation models, in the Danube region countries, it is of high importance to analyse in detail how the operation and management structure is set up in the different inland cargo ports.

As defined in the previous chapter there are many different roles and thus actors in most of the ports who mostly define the given operation structure individually?

Public and Private Roles in Port Management: There are five main port management models based upon the respective responsibility of the public and private sectors. They include the public service port, the tool port, the landlord port, the corporatized port and the private service port.[11] Each of these models concerns ports that have different characteristics concerning the ownership of infrastructure, equipment, terminal operation and who provides port services such as pilotage and towage. While service and tool ports mostly exist to promote public interests, landlord ports attempt to balance public and private interests. At the other end of the spectrum, private service ports are maximizing the interests of their shareholders.

- **Public service ports**. The port authority of public service ports performs the whole range of port related services, in addition of owning all the infrastructure. They are commonly a branch of a government ministry and most of their employees are civil servants. Some ancillary services can be left to private companies. Because of the inefficiencies they are related with, the number of public service ports has declined.
- **Tool ports**. Similar in every aspect to a public service port, the tool port differs only by the private handling of its cargo operations, albeit the terminal equipment is still owned by the port authority. In several cases, a tool port is a transitional form between a public service port and a landlord port.
- **Landlord ports**. Represents the most common management model where infrastructure, particularly terminals, are leased to private operating companies with the port authority retaining ownership of the land. The most common form of lease is a concession agreement where a private company is granted a long term lease in exchange of a rent that is commonly a function of the size of the facility as well as the investment required to build, renovate or expand the terminal. The private operator is also responsible to provide terminal equipment so that operating standards are maintained.
- **Private service ports**. The outcome of a complete privatization of the port facility with a mandate that the facilities retain their cargo handling role. The port authority is entirely privatized with almost all the port functions under private control with the public sector retaining a standard regulatory oversight. Still, public entities can be shareholders and thus gear the port towards strategies that are deemed to be of public interest.

[11] Since the port management model of a corporatized port is not applicable for Austria, it is not further described in this report.

2.1 Operation and management models in Austria

In the table below, information concerning the different actors in the ports in Austria are provided.

Table 2 - Operation and management models in Austria

Name of port	Port (land) owner(s)	Port authority	Port manager(s)	Port operator(s)	Owner(s) of superstructure[12]	Owner(s) of the port equipment[13]	Who define(s) the tariffs of the port	Who is the provider of the different port services	Public service obligations if relevant
Ennshafen	Ennshafen OÖ GmbH, Ennshafen NÖ GmbH	Ennshafen OÖ GmbH, Ennshafen NÖ GmbH	Ennshafen OÖ GmbH	Ennshafen OÖ GmbH	Private cargo handling companies, partly Ennshafen OÖ GmbH	Private	Infrastructure tariffs by Ennshafen OÖ GmbH and Ennshafen NÖ GmbH Handling tariffs by	Private companies	Water + electricity

[12] Fix infrastructure, upon ground
[13] Mobile equipment – everything that moves

							private operators		
Rhenus Donauhafen Krems	City of Krems (90%) + family Mierka (10%)	City of Krems, Port Department	Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Gantry cranes: City of Krems Warehouses: Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Infrastructure fees: City of Krems Handling: Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Mierka Donauhafen Krems Gesellschaft m.b.H. & Co. KG	Water + electricity
Hafen Wien	Wiener Hafen GmbH & Co KG (properties near the Danube); Wiener Hafen Lager-Ausbau	Wiener Hafen GmbH & Co KG	Wiener Hafen GmbH & Co KG, Wiener Hafen LagerAusbau- und Vermögensverwaltung GmbH & Co KG	Wiener Hafen Lager-Ausbau und Vermögensverwaltung GmbH & Co KG	Wiener Hafen GmbH & Co KG, Wiener Hafen Lager Ausbau- und Vermögensverwaltung GmbH & Co KG, Private	Wiener Hafen GmbH & Co KG, Wiener Hafen Lager Ausbau- und Vermögensverwaltung GmbH & Co KG, Private	Infrastructure and Handling Tarifs by Wiener Hafen Lager Ausbau- und Vermögensverwaltung GmbH & Co	Wiener Hafen Lager Ausbau- und Vermögensverwaltung GmbH & Co KG	Water + electricity

	und Vermögensverwaltung GmbH & Co KG				(Albern, Lobau)	(Albern, Lobau)	KG, Private (Albern, Lobau)		
Hafen Linz AG	Linz AG	Linz AG	Linz AG	Linz Services GmbH	Linz AG	Ling AG	Infrastructure: City of Linz Handling: Linz AG	Linz Services GmbH, Container + bulk + general cargo Petrol, gasoil: Shell,	Water + electricity
Factory port of voestalpine (Linz)	Voestalpine Stahl GmbH	Voestalpine Stahl GmbH	Logistik Service GmbH (LogServ)	Logistik Service GmbH (LogServ)	Voestalpine Stahl GmbH	Logistik Service GmbH (LogServ)	Logistik Service GmbH (LogServ)	Logistik Service GmbH (LogServ)	-

2.2 Analysis of the port management and operation model in

2.2.1 Characteristics of the operation models

There are different port management models in Austria. In fact, the following management models can be found in Austrian Danube ports:

Table 3 - Management models of Austrian Danube ports[14]

Port of Linz (Linz AG)	Ennshafen port	Rhenus Donauhafen Krems	Port of Vienna	Factory port of voestalpine
public service port with minor landlord activities	mainly oriented towards landlord activities	mainly oriented towards a tool port	public service port with minor landlord activities	factory port

As can be seen in Table 3, especially the landlord model is often integrated in Austrian ports. This may be due to the benefits of this port management model as described later in this report (see chapter 2.3). This port management model is also ideal for PPP (public private partnership) models, which have evolved as a good mean to manage port operations effectively. Even though different port management structures are used in ports worldwide a majority of large and medium sized ports use the landlord port management model.[15] This can also be said for Austria – the biggest ports in Austria (Port of Linz and Vienna, Ennshafen port) also integrate the landlord model to varying degrees. Thus, responsibilities are divided between the public and the private sector.
This port management model may be chosen by those three ports due to their geographic location: all three ports are logistically ideal situated in important economic areas. Thus, collaboration with stakeholders from the industry is an important aspect for these ports. The port of Linz (Linz AG) and the Ennshafen port are located in Upper Austria, a manufacturing location with industry-leading companies (such as voestalpine or KTM). In addition, the two ports are also accessible via rail and road – facilitating land-to-land or land-to-water transshipment. Also the port of Vienna is located at an important economic centre of Austria – including the Vienna region, Lower Austria and Burgenland. The hinterland connection – by rail and road – is also good, allowing international transport to neighboring countries.

2.2.2 Nature and content of the contractual relationships

There are different contractual relationships in Austrian ports which differ on port level. The following examples concerning the nature and content of the contractual relationship between the actors of ports were provided by project partners:

[14] Source: viadonau, 2013, Manual on Danube navigation, p.91
[15] Source: http://ppp.worldbank.org/ppp/sector/transportation/ports [28.11.2017]

Ennshafen port: lease and transshipment contracts with port owner/manager and private companies (or only lease contract or only transshipment contract) exist

Port of Vienna: Contractual relationships are managed through an in-house real estate department. In principle, there are two settlement models: The first contractual model is by rent or lease. The second contractual model is by real estate and/or land sale. The second model is only used in strategic settlements and is not a standard offer of the port.

2.2.3 Rules and legislation

Concerning the rules and legislations relevant for ports in Austria a desktop research was conducted using search engines such as Google and specific national and international websites. On national level, the Legal Information System of the Republic of Austria (www.ris.bka.gv.at) was used to identify relevant rules and regulations. On international level, the database for European Union law (http://eur-lex.europa.eu/) was used to find relevant rules or laws on European level. By using the term 'port' in the search field, 27,841 relevant results are shown, which include EU law and related documents, official journals, national law and legislative procedures. (By using the term 'inland port', 6,449 relevant results are shown). Further filters such as year of document or author are provided to limit the search. This result shows that there is a high number of rules and regulations concerning ports in Europe. However, not all of these rules and regulations are applicable for Austrian ports or even Danube ports in general. Thus, an extensive evaluation of each rule and regulation has to be done (such as in the next chapter for Regulation (EU) 2017/352) in order to evaluate the impact on Austrian ports.

In the following table, some rules and regulations on national and European level are named which are relevant for Austria. In addition, further regulations such as Trade or Workplace Regulations as well as the Austrian Corporate Code (UGB) are relevant for Austrian inland ports at some point.

Table 4 - Rules and regulations relevant for Austria

national/ EU	name	link
national	BGBl. II Nr. 289/2011: Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)	https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447
national	BGBl. II Nr. 298/2008: Order of the Federal Minister for Traffic, Innovation and Technology concerning Navigation System Regulation	https://www.ris.bka.gv.at/eli/bgbl/II/2008/298/20080827
national	BGBl. I Nr. 62/1997: Federal law on inland navigation	https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10012703
national	BGBl. II Nr. 98/2013: Order of the Federal Minister for Traffic, Innovation	https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008374

	and Technology concerning Lake and river traffic regulations	
EU	Directive 2005/65/EC of the European Parliament and of the Council on enhancing port security	http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02005L0065-20090420&from=DE
EU	Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1511879513996&uri=CELEX:32004R0725
EU	Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1511879513996&uri=CELEX:32009L0016
EU	Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues - Commission declaration	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1511879513996&uri=CELEX:32000L0059
EU	Directive 2010/65/EU of the European Parliament and of the Council of 20 October 2010 on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1511879513996&uri=CELEX:32010L0065

2.2.4 Relevance of Regulation (EU) 2017/352

The Regulation (EU) 2017/352 was issued in 2017 after several years of preparation and consultation with various stakeholders of the European port industry. This regulation has a binding force only on maritime ports, the inland ports are not covered by the legislation. However, rules similar to those laid down in this legal act, might have relevance in the IWW sector. In frame of the current activity, we would like to assess the scale and scope of applicability of these rules for Danube ports in the participating countries.

For this purpose, each project partner should evaluate of applicability of Regulation (EU) 2017/352 - specific to maritime ports – for inland freight ports of their country. For each of the regulatory items below, please explain whether in your country there is already a regulation in place for the specific topic described by the Regulation (EU) 2017/352 according to the following (The entire legislation is at the following link: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R0352)

Table 5 - Applicability of Regulation (EU) 2017/352 in Austria

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
Article 4 (1)	*"According to the regulation the managing body of the port, or the competent authority, may require providers of port services, including subcontractors, to comply with minimum requirements for the performance of the corresponding port service."*	Yes	There are already minimum requirements for the performance of the corresponding port service - Especially for the execution of special transports.[16] Also defined in bilateral agreements between port management and port service providers; general legal foundations for port service providers
Article 4 (2)	In your country is there any minimum criteria determined by the managing body of the port, or the competent authority in relation to the following: (a) the professional qualifications of the provider of port services, its personnel or the natural persons who actually and continuously manage the activities of the provider of port services;	Yes	There are minimum standard criteria in Austrian ports concerning the qualifications of employees (e.g. harbour master, lock supervision or skippers).[17] For example also regulated by the Trade Regulation (general corporate matters, forklift or crane operators, railway workers).
Article 4 (2)	(b) the financial capacity of the provider of port services;	Yes	Concerning the financial capacity of the provider of port services in Austria there are criteria in the Austrian Corporate Code (UGB) as well as bilateral agreements or credit rating criteria
Article 4 (2)	(c) the equipment needed to provide the relevant port service in normal and safe conditions and the capacity to maintain this equipment at the required level;	Partially	In Austria there are commercial legal (including all regulations / see also § 82b) and other investment law assessments of port service providers, as well as railway or workplace

[16]Source: §10.10 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

[17]Source: § 1.02 and §11.02 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
			regulations. Furthermore, there is also a legislation on the safe operation of equipment in inland ports.[18]
Article 4 (2)	(d) the availability of the relevant port service to all users, at all berths and without interruptions, day and night, throughout the year;	Partially	In Austrian ports, business hours of the different stakeholders (e.g. port service providers) have to be respected
Article 4 (2)	(e) compliance with requirements on maritime safety or the safety and security of the port or access to it, its installations, equipment and workers and other persons;	Yes	Concerning ports in Austria, there are regulations for safety in domestic traffic in particular regarding hazardous goods and employee protection.[19] There are also commercial legal (including all regulations / see also § 82b) and other investment law assessments of port service providers, as well as railway or workplace regulations.
Article 4 (2)	(f) compliance with local, national, Union and international environmental requirements;	Yes	Important and already (partially) present in Austrian ports - There is a duty of care concerning avoiding damage to the environment. There are also measures to avoid pollution.[20] In addition, plant-related legislations have to be respected in Austria.
Article 4 (2)	(g) compliance with obligations in the field of social and labour law that apply in the Member State of the port concerned, including the terms of applicable collective agreements,	Yes	The entire labor and social law in Austria is in principle very strict. Regulations concerning working time, weekly rest period, paid holidays and similar working conditions should not

[18]Source: §8 and §9 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]
[19]Source: §8 and §11 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]
[20]Source: §1.04 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
	manning requirements and requirements relating to hours of work and hours of rest for seafarers, and with applicable rules on labour inspections;		be less favorable for port personnel than for the majority of workers in commercial establishments.[21] However, there is still a lack of harmonization in Austria relating to social and labour provisions (in particular concerning travel and rest periods and training of employees).[22]
Article 4 (2)	(h) the good repute of the port service provider, as determined in accordance with any applicable national law on good repute, taking into consideration any compelling grounds to doubt the reliability of the provider of port services.	Yes	In Austria there are credit assessments, bank ratings and other relevant systems (e.g. credit protection association) to guarantee creditworthiness of stakeholders.
Article 4 (3)	Does a flag requirement exist for waterborne vessels predominantly used for towage or mooring operations in ports located on its territory?	Partially	There are already specific rules for the use of flags.[23] However, there is no existing flag requirement in Austria for waterborne vessels predominantly used for towage or mooring operations in ports located.
Article 4 (4)	Shall the minimum requirements: (a) be transparent, objective, non-discriminatory, proportionate, and relevant to the category and nature of the port service concerned;	Yes	In Austria relevant provisions in material laws already exist (e.g. railway or maritime regulations, competition law, federal procurement law, Trade Regulations (obligation to contract), diverse commercial law matters, various EU internal market rules as well as a large number of individual conditions which emerge from sponsoring agreements for port facilities as

[21]Source: International Labour Office (ILO), "Recommendation on the social impact of new port handling methods", . Available under http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/normativeinstrument/wcms_r145_de.htm [16.11.2017]
[22]Source:Richard Regner (2008): Das Binnenschiffsverkehrsrecht, p.80
[23]Source: §3.03 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
			well as individual transhipment contracts.
Article 4 (4)	(b) be complied with until the right to provide a port service expires?	No	There is currently no national regulation in this context.
Article 4 (5)	Where the minimum requirements include specific knowledge of local conditions, shall the managing body of the port, or the competent authority ensure adequate access to information, under transparent and non-discriminatory conditions?	Yes	There are existing regulations in Austria concerning the infrastructure of ports.[24] In Austria, information relevant on national level concerning waterway conditions can be obtained from viadonau.[25] Regulated in terms of individual contracts.
Article 5 (1)	Shall the managing body of the port, or the competent authority treat providers of port services in a transparent, objective, non-discriminatory and proportionate manner?	Yes	Could be relevant for inland waterway transport. However, there is currently no regulation concerning the behaviour towards port service providers. Regulated in terms of individual contracts.
Article 5 (1)	Shall the managing body of the port, or the competent authority grant or refuse the right to provide port services on the basis of the minimum requirements established in accordance with Article 4 within a reasonable period?	Yes	Currently there is no regulation concerning these issues for ports in Austria. However, it would make sense to confront port service providers with certain consequences (e.g. contractual penalty) if certain conditions agreed in terms of contracts in advance are not met. These consequences should be duly justified! Regulated in terms of individual contracts.
Article 5 (1)	If yes, shall any such refusal, by the managing body of the port, or by the competent authority, be duly justified?	Yes	
Article 5 (1)	or shall any limitation or termination by the managing body of the port, or the competent authority, of the right to provide a port service be duly justified?	Yes	

[24]Source: §8 and §9 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]
[25]Source: viadonau: DoRIS . Available under http://www.doris.bmvit.gv.at/en/ [16.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
Article 6 (1)	May the managing body of the port, or the competent authority limit the number of providers of port services for a given port service for one or more of the following reasons: (a) the scarcity or reserved use of land or waterside space, provided that the limitation is in accordance with the decisions or plans agreed by the managing body of the port and, where appropriate, any other public authorities competent in accordance with the national law;	Yes	In Austria this is regulated by individual contracts. There is also a regulation in Austria which states in particular that companies which require a separate water area in the port (e.g. shipyards and repair shops, ship equipment companies, bunker stations) have to allocate a water area in public harbors to the required extent. But only in the way that the traffic is not hindered. However, in the event of a lack of space in the port, the authorities responsible pursuant to Section § 38(2) of the Navigation Act may authorize vehicles, not used by the company, to occupy these water areas, provided that the requirements of employee protection are respected and the operation of the company is not significantly impeded becomes.[26]
Article 6 (1)	(b) the absence of such a limitation is obstructing the performance of public service obligations as provided for in Article 7, including when such absence leads to excessively high costs related to the performance of such obligations for the managing body of the port, the competent authority, or the port users;	Yes	There is currently no regulation in this context. However, if limited space is available in ports such a regulation could be relevant in the future.
Article 6 (1)	(c) the absence of such a limitation runs counter to the need to ensure safe, secure or environmentally sustainable port operations;	Yes	This regulation comes up inevitably. An example in this context would be the following regulation: in ports, adequate facilities must be set up and operated for the reception of waste (e.g. kitchen waste, non-oily cargoes, unusable parts of marine equipment, etc.) on

[26]Source: §9 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
			vehicles, which must be designed to be easy to handle, so that there is no water pollution nor harmful effects on the environment (e.g. by smell, dust). Waste generated must be properly collected and treated.[27]
Article 6 (1)	(d) the characteristics of the port infrastructure or the nature of the port traffic are such that the operations of multiple providers of port services in the port would not be possible;	Yes	This regulation comes up inevitably. However, there is a regulation on transport at ports (For example, assess to ports can be prohibited for vessels or according to §40.03 and §40.04 for safety reasons or in case of overcrowding.[28]) Thus, it could be relevant for inland ports in Austria to include this issue in a regulation.[29]
Article 6 (1)	(e) where it has been established pursuant to Article 35 of Directive 2014/25/EU that a port sector or subsector, together with its port services, within a Member State carries out an activity that is directly exposed to competition in accordance with Article 34 of that Directive. In such cases, paragraphs 2 and 3 of this Article shall not apply.	No	There is currently no regulation in this context.
Article 7 (1)	May the Member States decide to impose public service obligations related to port services on providers of port services and may entrust the right to impose such obligations to	Yes	There is an existing federal permit for port operations. When ports are available 24/7 this makes the transfer of goods

[27]Source: §9 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]
[28]Source: §40.05 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" . Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [16.11.2017]
[29]Source: §40.05 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
	the managing body of the port, or to the competent authority, in order to ensure at least one of the following: (a) the availability of the port service to all port users, at all berths, without interruption, day and night, throughout the year;		from water to rail or road more smooth.[30]
Article 7 (1)	(b) the availability of the service to all users on equal terms;	Yes	In Austria regulated in the Navigation Act. Relevant for inland waterway transport, due to the increasing transparency. In Austria, there is a regulation regarding the harbor tariff. For example, the following vehicles are excluded: federal-, provincial- and municipal vehicles or vehicles used for the purposes of these regional authorities. Vehicles for emergency services, and those that provide assistance in the event of accidents. Vehicles providing icebreaking services or serving other vehicles and their crew. Floats which belong to the equipment of the port.[31]
Article 7 (1)	(c) the affordability of the service for certain categories of users;	Yes	Regulated by the approval of the demurrage charge by the district administration or magistrate.
Article 7 (1)	(d) the safety, security or environmental sustainability of port operations;	Yes	There are several regulations in Austria which refer to this context: Water Law and Navigation Act; Construction Law; Commercial Law. Relevant, due to the fact that inland transport places great emphasis on environmental awareness. [32]

[30]Source: Port of Rotterdam: Intelligentes Glied in Ihrer Lieferkette. Available under https://www.portofrotterdam.com/de/geschaeftsmoeglichkeiten/warum-rotterdam/intelligentes-glied-in-ihrer-lieferkette [27.11.2017]
[31]Source: §47 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)". Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]
[32]Source: §9 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)". Available under

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
Article 7 (1)	(e) the provision of adequate transport services to the public; and	No	There is currently no regulation in this context. viadonau offers a wealth of information regarding transport services.[33]
Article 7 (1)	(f) territorial cohesion?	Yes	Important - ports serve as logistics platforms, as well as a pusher for local companies for setteling and this leads to boosting the economy. As multimodal logistics hubs, they act as a central interface between the various modes of transport.[34] However, there is currently no regulation in this context.
Article 7 (1)	Besides the above mentioned is there any rule or regulation concerning the following fields regarding the inland cargo ports in your country?	Partially	The most important regulations for training, working conditions, infrastructure and the environment have already been mentioned.[35] On EU level the main objective is to provide grants for inland ports.[36]
Article 9	Safeguarding of employees' rights	Yes	This issue is already clearly regulated for ports in Austria.[37]
Article 11	Transparency of financial relations	Yes	There are regulation in Austria related to this context. The Austrian Corporate Code (UGB) and the resulting contracts, notified- and state programs.
Article 12	Port service charges	Yes	Regulated in Austria by permit requirement for demurrage charges by the authority as well as port tariff regulations.
Article 13	Port infrastructure charges		

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [15.11.2017]

[33]Source: viadonau: Transport Operators. Available under http://www.viadonau.org/en/economy/danube-logistics/supply-side/transport-operators/ [09.11.2017]

[34]Source: viadonau: Ports and Terminals. Available under http://www.viadonau.org/en/economy/danube-logistics/supply-side/ports-and-terminals/ [09.11.2017]

[35]Source: "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" Available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007447 [09.11.2017]

[36]Source: European Commission, 2017, NAIADES II. Available under http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0623&qid=1511797426720&from=EN [27.11.2017]

[37]Source: ÖGB: Kollektivvertrag Wiener Hafen – Arbeiter 2017 Available under: http://www.kollektivvertrag.at/kv/wiener-hafen-lager-und-umschlagsbetriebe-gesmbh-ang [16.11.2017]

Regulation (EU) 2017/352	Regulatory item	Answer	Comments
			In Austria there are also port duties for public ports including for example pierage, demurrage.[38]
Article 14	Training of staff	Yes	In Austria relevant regulations already exist (e.g. railway or maritime regulations, competition law, federal procurement law, industrial code (obligation to contract), diverse commercial law matters, various EU internal market rules as well as a large number of individual conditions that result from sponsoring agreements for port facilities as well as individual transshipment contracts. Relevant to create a standardized regulation for training of staff. However, international standards concerning training which are also relevant for Austria could be useful.[39]
Article 15	Consultation of port users and other stakeholders	Partially	There is currently no regulation in this context. Port service providers or other relevant stakeholders in ports are contacted by the port authority if necessary. However, there is no regulation which regulates the exchange of information in detail.
Article 16	Handling of complaints	No	There is currently no regulation in this context.

[38]Source: §41 in "Order of the Federal Minister for Traffic, Innovation and Technology concerning Waterways Traffic Regulations (WVO)" available under https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20005956 [16.11.2017]

[39]Source: International Labour Office (ILO), 2012, "Guidelines on training in the port sector" Available under: http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/normativeinstrument/wcms_214609.pdf [27.11.2017] p.66

2.3 SWOT – analysis of Port Management Models

Most common and widely accepted classification of port management models is the one applied by the World Bank.[40] This classification segregates ports according to their port management types, as follows:

- Public service port
- Tool port
- Landlord port
- Private port

Public service ports are characterized by their public character through which their prime focus is on safeguarding public interest in ports. In this management model, the Port Authority (whatever the term may be in different ports) is an entity that performs virtually all port related activities, from the management to the operational and regulatory issues. As such, the Port Authority is the majority (or sole) owner of all real estates, port infrastructure, suprastructure and all port equipment. In addition, the Port Authority performs all port services with its own labour, while the employees are frequently employed as civil servants. Public service ports are managed and operated under the auspices of the governmental (national, regional, local) bodies in charge for transport issues (ministries, directorates, departments, etc.). Responsible managers of such ports are frequently nominated by such governmental bodies and/or they are usually reporting to the head of such governmental bodies (ministers, directors, etc.). Prime duties of a public service port are focused on loading/unloading and related cargo handling services. Sometimes, a different public company may perform the operating activities of loading/unloading and cargo handling, but such company is highly dependent on the Port Authority or other related governmental bodies as its/their subordinate. This setup may frequently be quite a challenge for managers and operators alike, as their interest may be conflicting and can differ significantly.

In the ***tool port*** model, the setup of ownership is the same as in public service ports with the Port Authority as a public body/company still being the main actor and the main operator. However, loading/unloading and other cargo-handling activities are usually performed by a registered and/or licensed private cargo handling companies (a.k.a. *stevedoring* companies, or *stevedores*) but with the port equipment (quay cranes, jib cranes, gantry cranes, portal cranes, reach-stackers, forklifts, etc.) that belongs to the Port Authority and which is even operated by the employees of the Port Authority. Such private cargo handling companies are usually hired by either port agents and/or cargo shippers/receivers. .

The fact that operational responsibilities in this port management model are divided between the Port Authority and cargo handling companies can be a major problem in successful functioning of such ports. On the one hand, the Port Authority is the sole owner and operator

[40] Source: The International Bank for Reconstruction and Development/The World Bank, 2007, Port Reform Toolkit, Module 3: Alternative Port Management Structures and Ownership Models. Available under: https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/pdf/modules/03_TOOLKIT_Module3.pdf [28.11.2017]

of port equipment, but, on the other hand, it is a separate (private) cargo handling company is the one with contracting responsibilities towards the ship owners or cargo owners. Due to such setup of split responsibilities, the cargo handling company (stevedoring company) is not in a position to have a complete control of loading/unloading and cargo handling operations. Sometimes, for the purposes of avoiding such conflicting situations, the Port Authority may decide to rent the port equipment to cargo handling companies, but in such cases it is no longer classified as a real tool port.

In the case of a tool port, the Port Authority provides the land, infrastructure and suprastructure to cargo handling companies. In situations where cargo handling companies are not allowed to use their own labour and their own port equipment, such companies are rather small, with no abilities to build up their own capital assets and therefore their costs are predominately variable. In such setups the risk and costs of low utilization of port is usually absorbed by the Port Authority itself, since its main goal, like in the case of public service port, is still focused on the provision of port functions as a public service. This, in turn, is positive for the cargo handling companies as their business risks are significantly reduced. However, even in the case of low business risks, such cargo handling companies, due to their inability to build their own capital assets, usually do not have the potential to develop themselves into strong companies that would enable the port to operate efficiently.

The ***landlord port*** represents a balanced and very successful mixture of public and private port ventures. Here, the Port Authority takes the role of land and infrastructure owner and the role of a regulatory body, while independent entities (mostly private companies) perform port operations (loading/unloading and cargo handling activities), quite frequently with their own equipment and using port suprastructure usually built by themselves. This port management model is currently the most frequently applied model in large and medium ports, worldwide. Port infrastructure, owned by the public (state, region, municipality, port authority) entity, is leased to private port operators or to industrial users of the port like fertilizer factories, steel mills, refineries, oil terminals, etc. The Port Authorities charge the monthly or yearly lease fees, and such fees may be fixed, based on the surface of the port area under lease, or, such fees may be tied to throughput performed by the lessee (port/terminal operator), usually with the established minimum. Various combinations of setup of the lease fees are of course possible and are usually negotiated between the Port Authority and the prospective port operator. Amount of lease fees is also closely related to the degree of the development of the port area under lease, where lease rates are usually lower if the port area is practically a green field, while lease rates may be significantly higher if the Port Authority leases a port area (or a terminal) with already constructed quay walls and handling yards behind the quay. Private port operators are free to use and provide their own suprastructure and port equipment, which, at the end of the lease period, can be either sold to the Port Authority or completely dismantled and removed from the port area. Port labor issue, however, is a bit different in various ports or countries. Usually, it is the lessee (port/terminal operator) who provides his own labour, but in some ports the part of the work force must be hired (as an obligation) from the local port workers' union(s).

Fully ***private ports***, also referred to as the private service ports are scarce, and nowadays only existing in the UK and partly in New Zealand. Full privatization of ports represents the

most radical method of port reform. The port land, infrastructure suprastructure and port equipment are sold to private entities such as private port operators. In some cases, even the regulatory functions are transferred to the private port owner and in such cases ports are becoming virtually self-regulating. In this port management model, all port activities are considered as commercial activities (no public interest aspects in them) and are therefore apt to be sold to private companies. In case of private service ports, such port can offer services to third parties, thus assuming the former role of public service ports in this view. This port management model is very risky, as the port land is sold to private owners and therefore can be traded further, meaning that it can be sold for any activities, not only port related ones. This makes it extremely difficult for the government to maintain port activities and sometimes may require the land to be bought back from the private port operator. Such venture requires special clauses in the sale contract when the port land is sold, so as to ensure that the government has the status of the "preferential buyer" of the port land if need be, thus preventing the private owner to sell the land to third parties that might not be interested in maintaining port activities on that land.

Last, but not least, private service ports must be distinguished from the *private dedicated ports* or terminals, where the port/terminal owner uses the port/terminal facilities only for their own purposes (e.g. production of certain goods). Such ports/terminals do not (and sometimes are not even allowed to) offer any port services to third party users. Briefly, the characteristics of each of the type are as follows:

Public service port

- Focus mainly on realization and protection of public interest
- Public port authority performs *all* port services and manages a port
- Public port authority owns, maintains and operates all fixed and mobile assets (land, infrastructure and superstructure)
- Public port authority employs all port workers
- Controlled by the ministry in charge of transport affairs (sometimes even part of it)

Tool port

- Public port authority owns and maintains everything and performs most of the services
- Some cargo handling activities performed by an independent commercial entity but with mobile assets owned by the public port authority
- Shared operational responsibilities undermine port efficiency
- Public port authority leases the land, equipment and suprastructure available to an independent (private) cargo-handling companies

Landlord port

- Separated functions of port governance and port operations

- Most common and apparently most efficiently balanced port model
- Public port authority rents the land which it owns or manages on behalf of the state (region, municipality)
- Infrastructure is owned and managed by the public port authority and leased to private port operators
- Private port operator pays the lease to the public port authority (usually a fixed sum per square meter per year)
- The level of the lease amount is related to the initial preparation and construction costs (e.g., land reclamation and quay wall construction).
- Suprastructure assets and cargo-handling equipment mostly provided by separate (mostly private port/terminal operating company)
- Dock labor employed by private terminal operators, though sometimes can be hired from the port pool system (dockers' unions)

Private port

- Very few examples in the world (mainly UK and New Zealand)
- Port seen as fully commercial entity and thus being sold to private entity which manages and operates a port
- Land, infrastructure, suprastructure and all cargo-handling equipment is owned, maintained and operated by private entity
- Dock labor fully employed by private port owner
- Full withdrawal of the state (public sector) from port ownership, management and operation
- Some governments may simultaneously transfer the regulatory functions to private successor companies
- In the absence of a public port regulator (e.g. UK) privatized ports are essentially self-regulating.
- Risky venture for the government as the port land can be sold or re-sold for non-port activities, thus making it impossible to reclaim for its original waterside transhipment use.

Relations between the roles of the public and private sector in the above mentioned 4 port management models are summarized in Figure 1 below.

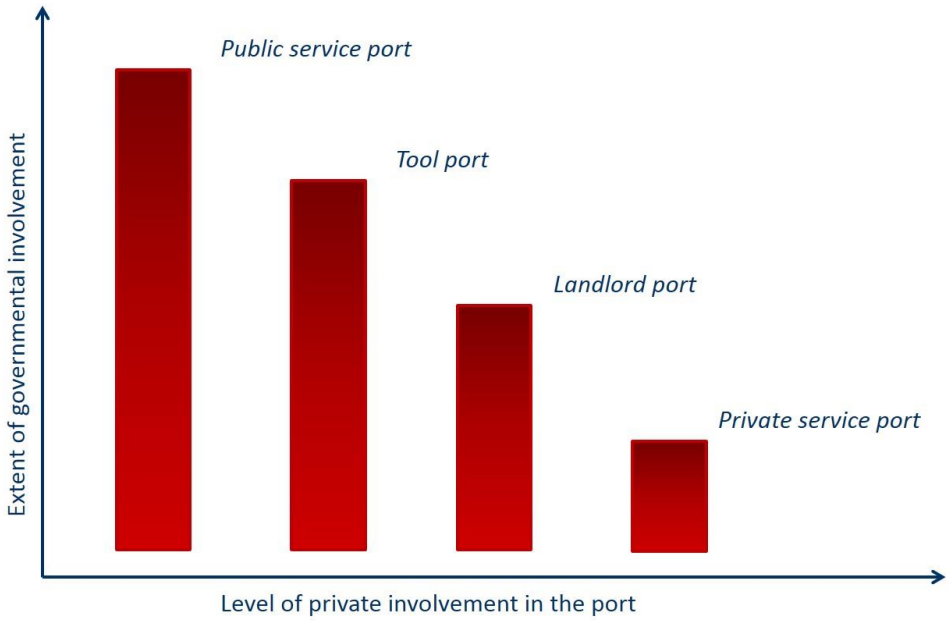
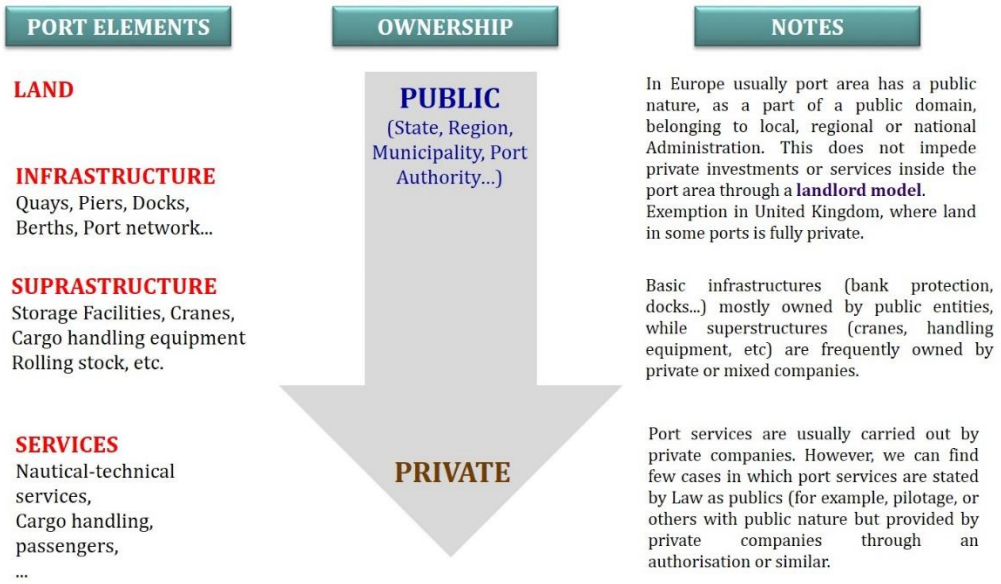


Figure 1 - Roles of public and private sector in different port management models[41]

Based on expert opinion and on global common practice in port management and operations, the conclusions on different responsibilities between public and private sector can be summarized in the following Figure 2.

[41] Source: iC consulenten, based on: The International Bank for Reconstruction and Development/The World Bank, 2007, Port Reform Toolkit, Module 3: Alternative Port Management Structures and Ownership Models. Available under: https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/pdf/modules/03_TOOLKIT_Module3.pdf [28.11.2017]

Figure 2 - Responsibilities of public and private sector in a typical European port[42]



In Austria, no major port can completely fit any of the above theoretical port management models, which is not unusual, as the same situation is found in many countries around the globe. However, most of the characteristics of each of the 4 theoretical port management models are found in all Austrian ports. For example, the Port of Krems (Rhenus Donauhafen Krems) is a mixture of a landlord and tool port due to the fact that the City of Krems, on the one hand, acts as a landlord for the port land, while the port is being operated by a private port operator Rhenus Donauhafen Krems and, on the other hand acts as the owner of the capital handling equipment (large gantry cranes) which is a characteristic of a tool port. Port of Vienna, however, is very close to typical public service port model, even though both port authority body and port operators are separated and are commercial entities with most, if not all, of its shares being in public hands. The port of Linz is a public service port with minor landlord activities. The Ennshafen port in contrast is mainly oriented towards landlord activities (see also Figure 2).

[42] Source: iC consulenten

2.3.1 SWOT analysis of port management model 1

The SWOT analysis in this chapter relates to the analysis of the theoretical port management models, not an analysis of the management models applied in different Austrian ports.

Table 6 - SWOT analysis of port management model public service port

STRENGTHS	WEAKNESSES
▪ Infrastructure, suprastructure and port equipment development and cargo handling operations are the responsibility of the same organization (single line of decision-making)	▪ No or only a limited role for the private sector in cargo handling operations ▪ Lower problem-solving capability and flexibility in case of labour problems, since the port administration also is the major employer of port labour ▪ No intra-port competition, leading to inefficiency ▪ Inefficient use of resources and under-investment as a result of government interference and dependence on government budget
OPPORTUNITIES	**THREATS**
▪ Quick reaction to operational problems due to the unity of command ▪ If commercialized or corporatized, strengths have more influence	▪ Operations are usually not user-oriented or market-oriented ▪ Lack of innovation ▪ Lack of adaptability to changes ▪ Complicated and/or rigid access to public funds for basic infrastructure.

2.3.2 SWOT analysis of port management model 2

Table 7 - SWOT Analysis of port management model tool port

STRENGTHS	WEAKNESSES
▪ Investments in port infrastructure and equipment (in particular ship/shore equipment) are decided and provided by the public sector, thus avoiding duplication of infrastructure or suprastructure assets	▪ The Port Administration and private operator jointly share the cargo handling services (shared operation), leading to conflicting situations ▪ Because the private operators do not own major equipment, they tend to function as labor pools and do not develop into firms with strong balance sheets This causes instability and limits future expansion of their companies ▪ Risk of under-investment ▪ Lack of innovation
OPPORTUNITIES	**THREATS**
▪ Potential for commercialization	▪ Inflexibility of pricing ▪ When the city/municipality is the owner -> public procurement rules ▪ Realization of business risks

2.3.3 SWOT analysis of port management model 3

Table 8 - SWOT Analysis of port management model landlord port

STRENGTHS	WEAKNESSES
▪ Excellent balance of public and private sector roles ▪ Ideal for PPP schemes ▪ A single entity (the private sector) executes cargo-handling operations and owns and operates cargo-handling equipment ▪ The terminal operators are more loyal to the port and more likely to make needed investments as a consequence of their long-term contracts ▪ Private terminal handling companies generally are better able to cope with market requirements	▪ Risk of over-capacity as a result of pressure from various private operators ▪ Risk of misjudging the proper timing of capacity additions
OPPORTUNITIES	**THREATS**
▪ Flexibility for various concession schemes ▪ Adaptability to market changes ▪ Flexibility of pricing and rewarding ▪ Access to capital markets ▪ External know-how used for the benefit of public sector as well ▪ High development potential due to business-like environment	▪ When applied for the first time, constant and detailed monitoring of performance is needed ▪ Constant adjustment of performance-based lease fees, if applied ▪ Risk of improper lease (or concession) fee system. ▪ Lease (or concession) contract re-negotiation can be difficult.

2.3.4 SWOT analysis of port management model 4

Table 9 - SWOT Analysis of port management model private service port

STRENGTHS	WEAKNESSES
▪ Maximum flexibility with respect to investments and port operations. No direct government interference ▪ Ownership of port land enables market oriented port development and tariff policies. In case of redevelopment, private operator probably realizes a high price for the sale of port land	▪ Government may need to create a Port Regulator to control monopolistic behavior. ▪ The Government (be it national, regional or local) loses its ability to execute a long term economic development policy with respect to the port business ▪ In case the necessity arises to re-develop the port area, Government has to spend considerable amounts of money to buy back the port land ▪ There is a serious risk of speculation with port land by private owners ▪ Limited influence of public authorities on performance ▪ Irreversible process (in most cases)
OPPORTUNITIES	**THREATS**
▪ One-time financial "injection" to the public sector ▪ Customer and business orientation	▪ Public interests unguarded ▪ No future cash flows for the public sector ▪ Strategic assets become out of control ▪ Corporate profits above long-term socio-economic goals ▪ Prejudiced/partial treatment of customers

2.4 Potential success factors

The structure and management model of a port is influenced by various factors. Amongst others, the socio-economic structure of a country (e.g. relevant industries), historical development (e.g. former colonial structure), the location of a port (e.g. city center or urban area) and the types of cargo handled in the port (e.g. containers or liquid cargo) are important factors.[43] Based on the SWOT analysis, discussions between partners and a literature review the following four potential success factors for port management models were identified:

1. Socio-economic structure
2. Bureaucracy
3. Balance of public & private interest
4. Market responsibility/flexibility

The potential success factors are described in more detail in the following section of the national report. In order to measure/evaluate the identified success factors, an assessment matrix was developed. This assessment matrix and the application of this assessment matrix for the port management models identified in the previous section of this report are described at the end of this chapter.

2.4.1 Success factor 1: socio-economic structure of country

Various factors define the socio-economic structure of a country, which is important for an inland port. For example, the type of ownership of the inland port and the type of port governance strategy of the public authorities define the regulatory settings of an inland port. Regulatory settings also cover e.g. land use policy, planning regulations, traffic management etc., which may influence the institutional context of inland ports.[44] In addition, the geographic location of an inland port is crucial for its competitiveness. A strategic location includes for example optimum infrastructure prerequisites such as natural deep water and good hinterland connections (road, rail, air). The access to financial resources is also crucial for the socio economic structure: ports with sufficient financial resources of the ability to raise the financial resources required. These financial resources can either origin from the public sources (e.g. government) or private sources (e.g. private operators). This success factor can be defined as an external success factor, which can be different on country level.

[43] Source: The International Bank for Reconstruction and Development/The World Bank, 2007, Port Reform Toolkit, Module 3: Alternative Port Management Structures and Ownership Models. Available under: https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/pdf/modules/03_TOOLKIT_Module3.pdf [28.11.2017]

[44] Source: Wiegmans, B.; Witte, P.; Spit, T., 2015, Characteristics of European inland ports. A statistical analysis of inland waterway port development in Dutch municipalities. In *Transportation Research Part A: Policy and Practice* 78, pp. 566–577.

2.4.2 Success factor 2: bureaucracy

Bureaucracy can be understood as the complexity of decision-making processes and the hierarchical structure. These two issues can differ in the different port management models influencing administrative process such as budgeting, maintenance strategies and investments in infrastructure. For example, in public service ports there is a single line of decision-making and quick reactions to modified conditions are possible. By contrast, in tool ports conflicting situations between the port administration and private operators can occur, which may influence the decision making processes. Especially private service ports are very independent concerning decision-making processes and the hierarchical structure since there is no direct government interference.

2.4.3 Success factor 3: balance of public & private interest

European inland ports are important hubs in the European transport chain – linking roads and railways to inland ports. Thus, they play an important role for private companies or shippers as logistics hubs in their supply chain, facilitating multimodal transport.[45] Inland ports can be seen as important economic hubs, which should be attractive for private companies. In addition, inland ports have to respect public interests: Inland ports have a positive effect on a regional level since they provide sustainable transport options and attract industries that are dependent on the transport infrastructure. Inland ports stimulate economic growth and create jobs on a regional level.[46] In order to provide the appropriate infrastructure (e.g. hinterland connections), inland ports partially rely on public funding – depending on the port management model.[47] In order to be successful, a good balance between public & private interests has to be found. For example, public service ports face inefficient use of resources and under-investments as a result of government interference and dependence on government budget and operations are usually not market-oriented. In this context there isn't a good balance between public and private interests. In contrast, the landlord port model offers an excellent balance of public and private sector roles.

2.4.4 Success factor 4: market responsibility/flexibility

Different trends are influencing the logistics sector which are also affecting inland ports. For example, sustainability and digitalization already play an important role and this will still be an important topic in the future. Also horizontal and vertical collaboration are an important trend in the field of logistics in order to guarantee competitiveness.[48] In addition, a modal shift towards inland waterways is desired by the European Commission as well as an

[45] Source: European Federation of Inland Ports (EFIP), 2011, Response of the European Federation of Inland Ports on the Roadmap to a single European Transport Area. Available under: https://www.inlandports.eu/media/roadmap_2050_whitepaper_positionefip.pdf [27.11.2017]
[46] Source: European Federation of Inland Ports (EFIP), 2014, EFIP position on State Aid to inland ports. Available under: https://www.inlandports.eu/media/140116-state-aid-position-efip.pdf [27.11.2017]
[47] Source: European Commission, 2013, Ports 2030. Gateways for the Trans European transport network. Available under: https://ec.europa.eu/transport/sites/transport/files/modes/maritime/ports/doc/2014-04-29-brochure-ports.pdf [27.11.2017]
[48] Source: Deutsche Post AG, 2010, Delivering Tomorrow. Towards Sustainable Logistics. Available under: http://www.dhl.com/content/dam/downloads/g0/logistics/green_logistics_sustainable_logistics_study_en.pdf [27.11.2017]

increased market access to ports in the future.[49] Thus, also inland ports and their port management models have to be flexible in order to be able to response to changing market conditions. In this context, especially the landlord port management model has the strength that private terminal handling companies generally are better able to cope with changing market requirements. In addition, this port management model has the opportunity to be adaptable to market changes in general. Also the private service port management model has the strength of market oriented port development. In contrast, the public service port management model faces the threat of lack of innovation and lack of adaptability to changes.

2.4.5 Applicability of the identified success factors for best practices on port management and operation model

The identified success factors can be applied on the different port management models using an assessment matrix with the following scales for each success factor:

- Since the **socio-economic structure of a country** is an external factor, it doesn't make sense to evaluate this factor for each port management model individually. Since in Austria, all four port management models can be found it can be assumed that the socio-economic structure of Austria is beneficial for all four port management models in some way. However, each port management models faces different challenges (see SWOT analysis) which may be different in other countries with another socio-economic structure.
- **bureaucracy**: high – mediocre – low
- **balance of public & private interest**: high – mediocre – low
- **market responsibility/flexibility**: high – mediocre – low

In the following table the port management models are evaluated based on the four identified success factors. The evaluation is based on the SWOT analysis from Chapter 2.3.

Table 10 - Assessment Matrix - Success Factors on Port Management Model

		PORT MANAGEMENT MODEL			
		public service port	tool port	landlord port	private service port
SUCCESS FACTOR	bureaucracy	*low*	*mediocre*	*low*	*low*
	balance of public & private interest	*low*	*mediocre*	*high*	*low*

[49] Source: European Commission, 2011, White Paper – Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system. Available under: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0144&from=EN [27.11.2017]

	market responsibility/ flexibility	*low/ mediocre*	*mediocre*	*high*	*high*

2.4.6 Relevance

Since each port differs from another it is very difficult to define an approach to evaluate the performance of a port management model. However, the presented assessment matrix is a first approach - based on the SWOT analysis of generally known port management models - to compare the advantages and disadvantages of the different port management models. Ports can use the developed assessment matrix in combination with the external success factor 'socio-economic structure of a country' and an individual SWOT analysis. Based on the results, ports can analyse their status-quo and define next steps for the future. As already mentioned, the socio-economic structure can be different on a country level and thus the values in the evaluation matrix can be different on a country level for a specific port.

2.4.7 Applicability

Even though the identified success factors cannot be measured in terms of numbers, they can be measured based on a SWOT analysis. By elaborating a SWOT analysis for each port individually the elaborated assessment matrix can be used by ports to evaluate their port management model and derive measures for the future.

2.4.8 Comparability

The success factors were identified based on the SWOT analysis for the main four port management models. Thus, it can be assumed that the elaborated assessment matrix can be used to compare port management models of different ports on international level. However, no statement concerning which port management model is the best can be provided by the elaborated assessment matrix. However, this methodology can be used to evaluate the status-quo of the port and to define measures for the future.

3 Best practices

In the following section, two best practice examples - the port of Vienna and the Ennshafen port – are described, including a detailed description of their port management model. Those two ports were chosen since the Port of Vienna can be named as the largest port on the Danube in Eastern Europe and the largest trimodal hub in Austria (connecting rail, road and inland waterway).[50] For Western Austria, the Ennshafen port can be named as an important trimodal hub and the largest connected industrial area on the upper Danube - combining business park areas with the port area.[51] The port management models of both ports are described

[50] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)
[51] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)

3.1 Port of Vienna

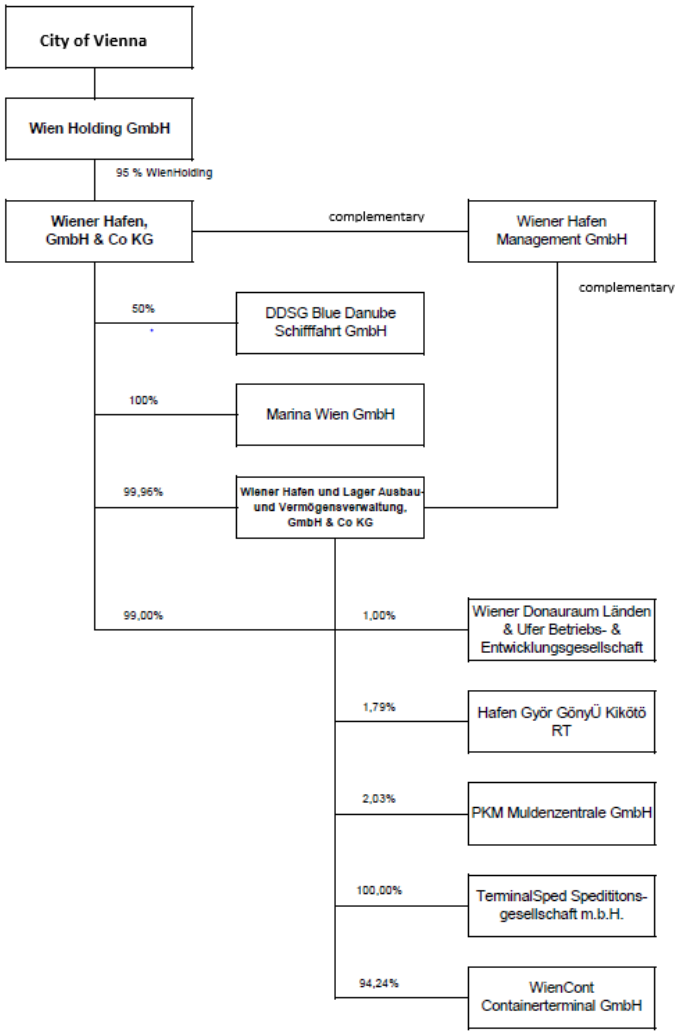


Figure 3 - port operation model: Port of Vienna

Port Management Model As a general partner for the limited partnerships, Wiener Hafen Management GmbH is the managing director of Wiener Hafen and Lager Ausbau und Vermögensverwaltung, GmbH & Co KG and Wiener Hafen, GmbH & Co KG.

Wiener Hafen, GmbH & Co KG is a member of Wien Holding. The Vienna Economic Chamber (Wirtschaftskammer Wien) has a 5 percent share in the company. Wiener Hafen, GmbH & Co KG is the owner of the port facilities comprising real estate, buildings, wharf equipment, and operates the harbors in Freudenau, Albern and Lobau. The holdings DDSG Blue Danube, Marina Wien and Wiener Donauraum also belong to this company.

The Wiener Hafen Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG, apart from ownership and operation of all storage and vehicle facilities and all real estate that is not directly located in the port, the company is responsible for all crane operations required for cargo handling. It also manages the holdings WienCont and Györ Gönyö harbour.

Wiener Hafen, GmbH & Co KG and Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG form the unit publicly known as port of Vienna (Hafen Wien) offering solutions tailored to the needs of its customers.

Success Story

The Port of Vienna is especially successful with the services container stuffing and stripping as well as with its car terminal.

Car terminal

In 2016, the port of Vienna handled 72,000 vehicles. In 2017, the storage space was expended up to 10,000 parking lots. In addition, a covered storage area in the form of a parking garage

is offered. To briefly describe the dimensions: there is one block train per week and about 40 trucks a day - approximetaly 6 cars per day are delivered. The main customers are Lagermax, Autoservice, CAT, GEFCO. Further special value added services in this business case such as cleaning packages, dewaxing and refueling. Business in this context is increasing every year since the last 10 years. Customer satisfaction in this sector is increased by offering many additional services with own employees. The port of Vienna also has the possibility to park imported vehicles in the port, which have not been cleared. Success factors in this business case, are the proximity to the city of Vienna, the generous space in the port and the framework which is given. Prerequisites are large space requirements and very high safety standards.

Container Stuffing and Stripping
The port of Vienna has a specialized team in this segment, which has been responsible for this area for about 10 years. 200 containers per year are stuffed in the port of Vienna. The most common goods, which are stuffed, are high quality industrial machinery, raw materials and cars. The port of Vienna is in a suburb of the city of Vienna and directly connected to an industrial area. As the industrial sector disappears from the city, competing logistics service providers in this area are no longer specialized in Container Stuffing and Stripping. The big success factor is our specialized and very high-quality port infrastructure in the field of machines. The prerequisite is an appropriate area and qualified, well-trained employees.

3.2 Ennshafen Port

Port Management Model
Ennshafen OÖ GmbH – a company owned by the federal district of Upper Austria - is the owner of the port and do all the administration of the port; Ennshafen port has the PPP-principle as a core part of his strategy, therefore it only builds the basic infrastructure, the suprastructure is invested by private companies, who have got special contracts with EHOÖ (licence contracts and shipment contracts); as well the core parts of the port (quays) are part of a greater mixed area, were a lot of other private companies are owners of ground, buildings and facilities; so it is difficult to find exact battery limits between “port area” and “additional private area” and to get statistic figures, because sometimes a “working area” is a mixture between licence area and own area of a partner company.
Even in Lower Austria the port company Ennshafen NÖ GmbH is owned by the federal district and has got a quite similar structure like in Upper Austria.

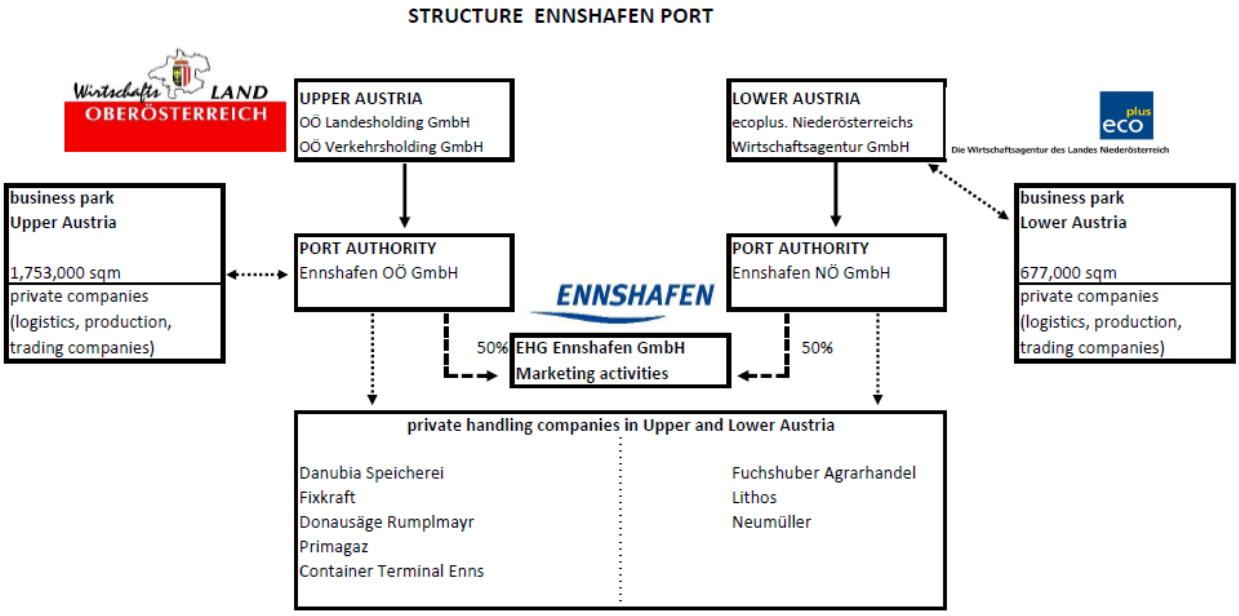


Figure 4 - port operation model: Ennshafen port

Success Story

The Ennshafen OÖ GmbH was founded in 1976. The basic concept shows a very strong orientation to PPP model (Public Private Partnership) with regard to the classical Landlord-Port-Principle. The whole business concepts and equipment together with properties as well as the first infrastructure construction was oriented to it. Based on the increasing developments in intermodal traffic (stronger implementation of Container business to the logistics), the Ennshafen Container Terminal was founded after the turn of the millennium in Upper Austria. High financial investments were necessary and Ennshafen OÖ GmbH stepped into operative business of superstructure in the port. At this time, the investment was necessary for the establishment of the connection of the very strong export oriented industry in the surroundings to the international and intercontinental logistic hubs.

In the following years this business developed quite dynamical in Europe and in the whole world, therefore this business needed strong growth with additional high capital requirement. This growth was already not possible due to territorial reasons for the terminal in Ennshafen Port.

Therefor the decision was made 2013, to re-focus on the previous landlord-function of Ennshafen port and the lease of container terminal Ennshafen was announced. Great interest was shown by all big established players in Europe. This process was executed under the condition of neutral access and open operation for the whole economy to the infrastructure.

Final result was a 20 year leasing contract for the container terminal out of this tender. The new tenant could double the terminal area out of their own available estate, and triple the crane capacity shortly. Five additional block train tracks were constructed. With the modernization and further development of the container terminal, an important course was set for the future of Ennshafen port and the whole economic region around.

Goal of the new operator is, to establish an „extended port“ for seaports in Ennshafen Port, an attractive bundling-center (Gateway) for seaports as well as industrial centers in Europe,

because big seaports outsource their important tasks to hinterland ports, they can't fulfill on time on their own. Ennshafen Port has a great potential as intermodal logistics hub. Thereby a new quality and USP could be reached for Ennshafen port.
With this strategy the Ennshafen port created free space to re-focus on the original strategy line as a landlord-port and further develop the strategical development for the whole port area including the huge business parks in a proactive way and realize high quality standards of infrastructure as a TEN-T-Core node. Public Private Partnership as well as task-sharing economic activity is the Credo for this location for successful developments in the future.

For both ports, the success factor 'socio-economic structure of the location' is especially important, due to the location near important industrial areas in Vienna/Lower Austria and Upper Austria. In addition, the hinterland connection via rail and road facilitates a trimodal transport, transshipping from land to water. Thus, the two ports are not only important logistics hubs for inland waterway transport but also for goods which are transported by rail and road only (land-to-land transshipment). Both ports also show a good balance between 'public and private interest', since they contribute to the development of the region, by attracting companies to use the services of the port. Furthermore, offered services are adapted based on changed market requirements (e.g. new value added services or opening a LNG gas station). In summary, both ports can be identified as best practice examples for Austria concerning port management models.