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Modelling the railway port infrastructure management system: a case study of the Port of Ploče

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ABSTRACT

Regarding the organisation of the railway in Croatian ports, the institutional framework on which the railway within the port operates is relatively uncertain with potential conflicts of the national and EU legislation as well as diversities in practical approaches from the governing institutions towards empirical solutions on the field. This paper develops possible models for organisation of the management of rail transport services within the port area in order to research governance mechanism and provide standards of quality of railway operations, which are in accordance with the existing legal framework and on best practice solutions. This models are developed in order to enable several main principles important for port operations and business development such as transparency of the access conditions and service prices, single entry point, services in the rail terminal fully coordinated with the capacity allocation, performance scheme as part of the infrastructure charging system, performance targets in the form of indicators, access to topical reports on the service quality of the service in the port terminal, and implementation of the use-it-or leave-it rule.

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1 Introduction

The port of Ploče is situated at the Central Adriatic coast line (precisely situated on the eastern coast of the Adriatic Sea on the location of 43˚03 'N and 17˚26' E), approximately 120 km south from the city of Split and 100 km North from Dubrovnik. The ports central-Adriatic location, as well as its position in the south of Croatia leads to an international hinterland, covering the Dalmatic Coast line as well as Bosnia and Herzegovina, Serbia, Montenegro and Hungary. The port of Ploče is of great importance for the national economy as well as for the neighbouring Bosnia and Herzegovina as a result of its specific positioning. The Bosnian border is only 25 km from the port of Ploče and the port can also play a significant role for partners from Serbia and Montenegro, Hungary and other Central European countries.

The port of Ploče is directly connected with its hinterland in Bosnia and Herzegovina through a 24 km railway line and road, further to the north-eastern part of Croatia, and to Central Europe by rail and road. That extends along the route of the C branch (Budapest – Osijek – Sarajevo-Ploče) of the Pan-European Corridor V (Venice – Trieste – Budapest – Uzhgorod – Lviv). [16] Through a 24 km railway line and road, the port is linked with its immediate hinterland of and further to the North-East of Croatia and Central Europe [17]. It is the start/end point of the Corridor Vc (Budapest–Osijek–Sarajevo–Ploče). [8]

This paper develops possible models and gives suggestions for organisation models for the management of rail transport services within the port area. The models should state the governance mechanism of standards and quality of railway operations, and should be based on the existing legal framework and on best practice solutions.

Regarding the organisation of the railway in Croatian ports, the legal basis on which the railway within the port operates is legally uncertain. A potential conflict of the Maritime Domain and Seaports Act [9] with the Railway Act [11] of the Republic of Croatia is possible. Also, a potential conflict between the above national laws and the EU legislation (especially on railway matters) was also important to be taken into consideration. Despite that, there are evident missing contractual agreements for the current shunting services, that operates without any contractual basis whatsoever within the port. Notwithstanding the legal questions, it is important to stress out that the matter could not be deemed to be satisfactorily solved without the consideration of commercial aspects, i.e. the market. The above points constituted the starting point and main focus for analysing the status quo and the con-

secutive design of the models for the future organisation of the railway within the port.

2 The Institutional Framework Analysis

The analysis was carried out in order to establish solid foundations for modelling. Subject to the analysis were also the existing acts of the Republic of Croatia regarding the matter [1] [9] [11] [14].[1]

The adoption of the *acquis communautaire*, i.e. the transposition of the Directive 2012/34/EU [5] establishing a single European railway area and determination of the framework for implementation of Regulation (EC) No 1370/2007 [12] on public passenger transport services by rail and by road and implementation of Regulation (EC) No 1371/2007 [13] on rail passengers' rights and obligations was completed with the latter two national regulations. Additionally the EU Directive 2004/49/EC [4] on rail safety was transposed. However, it is yet to be seen whether the national regulations will be able to withstand when coming under scrutiny by EU authorities.

While the legal analysis comes to the conclusion that the provisions of the regulations on the railways are not fully corresponding sector legislation on sea ports, and thus are – from a legislative point of view – not satisfactorily regulated, it has to be emphasised that both legislations have to be implemented, in respect of EU regulations that have to be adapted correspondingly.

The challenge at hand is that two sector legislations have so far not been harmonised when defining or regulating the same issues which is quite a common problem when transposing EU legislation into national legislation. Further, it is known that the Maritime Domain and Seaports Act undergo revision (to be in conformity with EU legislations on concessions) – though it has not passed parliament so far – it is to be seen, if and how antinomies between this act and the Railway Act [11] persist.

In order to provide legal certainty in this matter, it is important to go along with definitions of the corresponding EU Regulations and Directives – in the present case concerning the definitions of Directive 2012/34/EU [5] which have been transposed into the Croatian Railway Act [11].[2] In general, it is a rule to use definitions of the law that deals with an issue more specifically. In this case, the Railway Law (and the corresponding EU Directive) define railway matters more specifically than the Law on Maritime Domain and Seaports [9].

In a first step, it is to be pointed out that with regard to the organisation of the railway in the port, it has to be clearly distinguished between infrastructure and railway operation, a basic principle of European and Croatian railway legislation emphasising the separation of infrastructure and operations in its various forms. In that context, the legal terminology of the EU railway legislation is to be used.[3] For the purpose of the present elaborations the following concepts are vital [5]:

- Railway Undertaking that means any public or private undertaking licensed according to this Directive, the principal business of which is to provide services for the transport of goods and/or passengers by rail with a requirement that the undertaking ensure traction; this also includes undertakings which provide traction only;
- Infrastructure Manager that means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command and signalling; the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms;
- Service Facility that means the installation, including ground area, building and equipment, which has been specially arranged, as a whole or in part, to allow the supply of one or more services referred to in points 2 to 4 of Annex II;
- Service Facility Operator that means any public or private entity responsible for managing one or more service facilities or supplying one or more services to railway undertakings referred to in points 2 to 4 of Annex II;
- Allocation of railway infrastructure capacity by an infrastructure manager.

A further concept underlying the principle of separation of infrastructure and operations is the access of railway undertakings to railway infrastructure and services in the port. In the present context *the access* has to be distinguished from the provision, meaning the actual operation of services, too. For the better understanding of that concept it seems appropriate to cite Article 10 (1) of Directive 2012/34/EU: *Railway undertakings shall be granted, under equitable, non-discriminatory and transparent conditions, the right to access to the railway infrastructure in all Member States for the purpose of operating all types of rail freight services. That right shall include access to infrastructure connecting maritime and inland ports and other service facilities referred to in point 2 of Annex II, and to infrastructure serving or potentially serving more than one final customer.* [5]

Point 2 of the Annex II provides further detail: *Access, including track access, shall be given to the following services facilities, when they exist, and to the services supplied in these facilities: (a) passenger stations, their buildings and other facilities, including travel information display and suitable location for ticketing services; (b) freight terminals;*

[1] Maritime Domain and Seaports Act (Official Gazette, No. 158/03, 141/ 06, 38/09 and 123/11); Railway Act (Official Gazette, No. 94/13, 148/13); Safety and Interoperability of the Railway System Act (Official Gazette, No. 82/13, 18/15) and Concession Act (Official Gazette, No. 143/12).

[2] However, since the Croatian Railway Act might come under scrutiny by the EU authorities, it is advised to rely on the definitions of the Directive, which in case of any incorrect transposition would overrule national law.

[3] Definitions taken from Directive 2012/34/EU.

(c) marshalling yards and train formation facilities, including shunting facilities; (d) storage sidings; (e) maintenance facilities, with the exception of heavy maintenance facilities dedicated to high-speed trains or to other types of rolling stock requiring specific facilities; (f) other technical facilities, including cleaning and washing facilities; (g) maritime and inland port facilities which are linked to rail activities; (h) relief facilities; (i) refuelling facilities and supply of fuel in these facilities, charges for which shall be shown on the invoices separately. [5]

Starting out from these definitions, the main issues to consider from a legal point of view are:

– Who is in charge of constructing, maintaining and managing the rail infrastructure in the port?
– Who is in charge of guaranteeing the safety of rail operations and the rail infrastructure in the port?
– Who is in charge of regulating access to the port service facilities, i.e. non-discriminatory path allocation, publication of the conditions and the contractual agreements?

Regarding the situation on our case study example and notwithstanding certain minor open questions, the legal analysis came to the following conclusion about port of Ploče. In accordance with the Croatian legislation the construction, maintenance and management of the railway infrastructure in the port is entrusted to the port authority (main tasks of the railway infrastructure manager).

Therefore, the overall responsibility in the port of Ploče lies with the Ploče Port Authority. This is covered by both laws. However, Croatian railway legislation renders it possible that the Ploče Port Authority may delegate these tasks to other bodies or firms in accordance with other sectoral legislation. The Maritime Domain and Seaports Act, as sectoral legislation for ports, prescribes thereupon that the right of use of the existing infrastructure and superstructure and construction of new buildings and other facilities of port superstructure and infrastructure have to be delegated pursuant to a concession.

Following that several organisational models are possible, as is to be further elaborated. Regarding port of Ploče, the analysis of the concession agreement brought to light, that all the responsibilities and rights regarding the railway infrastructure – as well within the concession area – belong to the common infrastructure of the port and are as such under the control of the Ploče Port Authority. In other words, the Ploče Port Authority has to assume responsibility for them, unless it decides to delegate it pursuant to a concession to other bodies or firms.

One question to be solved with regard to the EU legislation and pursuant to the above findings is the question regarding the identity of the port as service facility or infrastructure manager. The port in its entirety can be defined as a service facility, according to point 2 of Annex II of Directive 2012/34/EU [5] and the Croatian Railway Act [11], the Ploče Port Authority could consecutively be defined as a service facility operator – if it were to operate terminals itself[4]. The fact that the Ploče Port Authority does not directly engage in the operation of service facilities and, due to the fact that the Ploče Port Authority has been found to be the responsible body for railway infrastructure, the Ploče Port Authority may be defined as an Infrastructure Manager according to the Directive 2012/34/EU [5], respectively the Croatian Railway Act [11].

3 Organisational Models for Infrastructure

From the organisational stand point one of the main questions is the issue about responsible infrastructure manager. Whereas the port may be defined as a service facility according to point 2 to Annex II of Directive 2012/34/EU [5], the existence of railway infrastructure in the sense of Annex I of the Directive does call for the application of the rules for the infrastructure manager.

As defined by Article 3 (2) of the Directive "*'infrastructure manager' means any body or firm responsible in particular for establishing, managing and maintaining railway infrastructure, including traffic management and control-command and signalling; the functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or firms".* [5]

This is supported by the results of the legal analysis, where it was concluded that the Maritime Domain and Seaports Act [9] and the Railway Act[11], both, allow for the assignment of management, construction and maintenance of port infrastructure to the port authority or the delegation of tasks thereof to others.

Resulting from the analysis, at least two possibilities for the organisation of infrastructure are possible.

According to the Croatian Safety and Interoperability Act [14], a rail infrastructure manager requires a safety authorisation.

At present, it is possible that the Safety Authority grants safety authorisations to more than one rail infrastructure manager in a port or terminal. As long as it is not for the same rail infrastructure. All applicants fulfilling the criteria according to the EU Directive 2004/49/EC [4] and the Croatian Railway Safety and Interoperability Act [14], shall receive the safety authorisation for a period that is no longer than one year. Since the above conditions are not satisfactory in the opinion of the European Commission and the Croatian Safety Authority it is possible that in the future the safety authorisation shall be issued solely to the port authority and usually for a period of at least five years.

[4] It is obvious that the law on seaports with its regulations on concessions does not incline the Ploče Port Authority to be an operator (concept of the land lord port) but the railway law does not deal with the matter of port concepts.

3.1 Model 1: The Ploče Port Authority as sole responsible and accountable body for the infrastructure

It is possible for the Ploče Port Authority to take over all the tasks related to that of an infrastructure manager. In fact, this is one of the main purposes and objectives entrusted to port authorities. Thus, the Ploče Port Authority has to undertake construction, maintenance, management of rail infrastructure, furthermore the management of access (path allocation) to the port´s rail infrastructure, publication of the conditions and the contractual agreements, charging, as well as guaranteeing the safety of the rail infrastructure, all by herself and in accordance with the law. Indeed, the construction and maintenance of infrastructure is one of the main activities of port authorities and, thus, it would be natural that it directly implements these activities in the public interest.

Furthermore, the port infrastructure, including railway infrastructure in ports, is considered a good of common interest. Its management should be considered exercising public interest that serves all members of the port community. The approach to the management of railway infrastructure by the Ploče Port Authority should insure sufficient care of all aspects of tasks related to that of infrastructure manager [3], with no concern over the expenses in respect of the profit[18].

The downside of this model is first and foremost the considerable need for additional human resources. The Ploče Port Authority would not only have to apply for the safety authorisation, but establish departments and systems for the management of all the other tasks described above. Further, the thus incurred financial needs have to be matched with the actual traffic flows in the port. At present, the expenses for institution building might, thus, not be justified.

3.2 Model 2: The Ploče Port Authority delegating the management of infrastructure to other bodies or firms solely responsible and accountable for it

The Ploče Port Authority may delegate construction, maintenance, management, including the management of access (path allocation), signalling and communication, charging, etc., to the most competent body or firm[5] by means of concessioning or tendering for concession , due to the current stipulations of the Maritime Domain and Seaports Act. In this case, the body or firm applies for the safety authorisation as infrastructure manager.

In order to ensure the legal obligations (safety, non-discriminatory behaviour of infrastructure manager and railway undertakings – defined by law or by means of concession contract) the Ploče Port Authority has to establish a supervision and reporting system since the Ploče Port Authority in its function is responsible for supervision of all concessionaires within the port area and accountable for them. Accountability of the Ploče Port Authority as infrastructure manager also lies within the railway legislation. If the functions of the infrastructure manager are delegated to other bodies or firms acting in the port on the basis of a concession agreement, they are equally accountable according to the railway legislation.

A practicable sub-model is the outsourcing of the rail infrastructure management to the incumbent rail infrastructure manager. That manager, as concessionaire, would have the experience of managing the rail infrastructure in the port which at present neither the Ploče Port Authority nor the port operators have. This model might complicate the handling for customers of the port, in particular when the railway undertaking serves more than one concessionaire in the port. Other concessionaires might feel patronised and even tempted to claim that this model constitutes a new monopoly within the port, if the tasks are given to one existing concessionaire.

An additional point that has be taken into consideration is the need for a supervision and reporting system to be implemented by the Ploče Port Authority and thus a possible need for additional resources.

Another important issue is that the charging regime for infrastructure is out of the Ploče Port Authority's hand in this case. Thus, the Ploče Port Authority will have to take appropriate actions (price caps etc.) in the corresponding contractual agreements.

In order to avoid scattered control and responsibilities and thus complicated procedures for applicants, the most appropriate solution could be built along the following major lines:

- The port authority applies for an authorisation as infrastructure manager
- The port authority needs to control and execute the establishment, maintenance and traffic management of railway infrastructure in the port
- One network statement shall be published for the port and all related facilities and services containing the terms and conditions of all the port operators having railway infrastructure on their premises.

Basis to all the above models is the fact that the Ploče Port Authority is responsible for the rail infrastructure in the port. This includes the preparation of application of a Safety Authorisation with its respective Safety Management System, a Network Statement, with the respective model of a track access contract; the latter two documents must be published in two official languages of the EU thus complying with the legal requirements of Croatia and the EU.

4 Organisational Models for the Railway Operations by a Railway Undertaking

At first, several general preconditions and/ or questions should be outlined here. A *port railway*, not leaving the port rail infrastructure does not need any licencing by the rail licencing authority in Croatia. It only needs a safety certificate, issued by the Croatian Safety Authority.

[5] In accordance with Croatian railway legislation, body or firm (as defined in Directive) may be only a legal person.

It has to be born in mind that a concession only for the management of port infrastructure without the purpose of executing port or other economic activities could be legally questionable.

A question to be considered is on how services, respectively price ceilings could be defined/ secured by the Ploče Port Authority. The four main models are developed:

4.1 Model 1: Award of exclusive shunting and manoeuvring rights through tendering

The Ploče Port Authority is allowed to issue an EU-wide tender for the selection of a shunting, manoeuvring, and other railway services. The selected railway concessionaire will get exclusive rights (no other railway undertaking may then supply the same services) to carry out shunting, manoeuvring and all the services that are sensible to transfer to such a railway undertaking to run a commercially sound business and facilitate the handling of goods for the port operators and its customers.

Special attention will have to be paid to tasks and obligations the Ploče Port Authority wishes to have fulfilled by a railway concessionaire; such as to fulfil certain services that are vital for an efficient operation in the port, but not commercially attractive, for example permanent availability of traction and shunting personnel, rescue trains, additional traction in case of failure traction etc..

So far, the Ploče Port Authority seems to be inclined to have such a solution with the legal argument that they should not engage in any economic activities since they are non-profit legal persons. This point still awaits a final analysis under the new legal circumstances (new Maritime Domain and the checking by the ministry of transport and – eventually – by the EC.

A concern of this Model could be the exclusivity of the concessioned port railway, since it might not be in conformity with Article 102 of the Treaty on the Functioning of the European Union (monopoly, abuse of market power, etc.) and the corresponding Croatian law on competition.

Another concern could be potential acts of discrimination by the railway concessionaire with regard to offering its services to railway undertakings that wish to transport goods to/from the port. It would be possible that two railway undertakings competing for such transports might not be treated in a non-discriminatory, equitable and transparent manner as is required in the Croatian railway legislation.[6]

In all likelihood, the railway concessionaire would require in its concession agreement a guaranteed volume in order to be commercially viable.

4.2 Model 2: Award of shunting and manoeuvring rights through tendering without exclusivity

The Ploče Port Authority is allowed to issue a tender as outlined in the Model 1, with the main difference that there is no exclusivity. As a consequence, the rail concessionaire might find itself in competition[10] with a railway undertaking that brings volumes to the port and is able to carry out shunting and manoeuvring of its waggons by its own means[6].

For example, the railway undertaking moves its train with diesel traction instead of electric traction and therefore is able to carry out shunting and manoeuvring inside the port at more competitive rates[2], than the rail concessionaire. There would be a high likelihood that the shipper prefers such services.

However, the risk of this model is that there is an inherent danger to gradually arrive at exclusivity, since the port operator might give the rail concessionaire preferential status, expressed in lower rates.

However, several concessions could be awarded [3] for shunting, manoeuvring, and other railway services. It is therefore up to any railway undertaking wishing to have access to the port to accept the services by any of concessionaires or carry out the required rail operations in the port by itself.

The reasoning behind such a possible behaviour is that the port operator wishes to support the rail concessionaire since the port operator has an interest that the rail concessionaire is commercially viable or offers attractive rates for other shunting and manoeuvring services.

4.3 Model 3: Open access: the customer is responsible for rail operations in the port

According to the Croatian railway legislation, open access to ports is guaranteed to every railway undertaking under non-discriminatory, equitable and transparent conditions laid down in a Network Statement. Every railway undertaking can decide whether to do the shunting or manoeuvring:

- by itself for its own waggons; or
- makes an agreement with another railway undertaking (for example the first that arrives with electrical traction and has no means of doing shunting and manoeuvring in the port, but the other railway undertaking arriving with diesel traction offers its diesel traction services to do the shunting and manoeuvring– since its rates are more competitive than those of the rail concessionaire. In practical terms, the other railway undertaking takes over the waggons outside the port of Ploče and enters the port. In this respect there is no collision with the existing port legislation, since the change of traction from electric to diesel traction is carried out outside the port on a contractual basis between the two railway undertakings. It is the simple entry of another railway undertaking doing shunting and manoeuvring for its own use. Therefore the other railway undertaking does not need a concession.); or
- makes an agreement with the rail concessionaire.

This model will maintain a certain degree of competition and independence – in particular for the port operators [7][15].

[6] In this case, the Croatian rail market regulator HAKOM, in close co-operation with the Croatian competition authority would have to intervene ex officio or upon appeal by the RU affected.

This model is in full conformity with the rail port policy laid down in the EU Directive 2012/34/EU [5] since the port operators as well as the shippers wishing to use the Port of Ploče, will not be confronted with a monopolist rail undertaking.

The idea is that the port operators would like to free themselves from any rail monopoly inside and outside the port.

4.4 Model 4: Open access in combination with the Ploče Port Authority operating its own railway

Notwithstanding pending legal questions (mentioned in the Model 1), the Ploče Port Authority could establish its own organisational model either by becoming a railway undertaking or establishing a respective subsidiary. They could acquire or lease second-hand locomotives, employ or lease professional railway personnel, while still granting open access to the infrastructure to any applicant wishing to enter.

The organisational and operational possibilities for the detailed design are manifold (e.g joint ventures with port operators, freight forwarders, shipping lines or licenced railway undertakings).

Applying this model, the Ploče Port Authority would have a double rail function:

– Rail Infrastructure Manager with the responsibility of managing, maintaining and operating the rail infrastructure, if Ploče Port Authority decides to be the infrastructure manager; and
– Rail Undertaking in charge of shunting and manoeuvring whenever another railway undertaking does not wish to carry out such services in the port for its own use.

Such a model would require additional resources for management, personnel and financing. This model may be a possibility if there are high transport volumes. At the current stage it would, thus, not be recommended.

Further, it is important to note that there the requirements of Article 7 (2) of Directive 2012/34/EU [5], calling for strict separation of path allocation and charging from the railway operations have to be met when the Port Authority assumes the double rail function.

However, there would exist a commercial viability to operate its own trains on the rail section to the cross border (and beyond – if the foreign rail sector is opened), thus avoiding the difficulties the incumbent state-owned railway company poses at the present time.

5 Conclusion

The recast of EU market access legislation under respective EU Directive had to be transposed and applied by Member States by June 2015. Croatia already transposed the directive almost one-to-one in its railway law 2013, in force since the beginning of 2014. By virtue of the EU Directive and the Croatian railway law, rail terminals in ports and other facilities and services, such as shunting, transhipment equipment fall under open access rules of EU. Providers of such services have to publish access conditions and prices free of charge on the internet in at least two official languages of the EU. Railway undertakings and other applicants for capacity that feel unfairly treated have the right to lodge complaints with the national rail regulatory body.

This body may also launch proceedings and take remedial action on the own initiative (ex officio), which is of key importance when users of the port infrastructure do not move because they have to maintain good business relations with the terminal operators and/or the rail infrastructure manager of the port.

In order to be in full compliance with the legal stipulations, the following decision criteria will have to be considered:

1. Transparency of the access conditions and service prices: the network statements shall provide full details on the technical access conditions, prices and opening hours of the services.
2. Single entry point (unit in charge of allocating path capacity inside the port): potential users shall be able to request terminal capacity and all other services from a single point of entry. This Single Entry Point has the power to allocated capacity and concludes track access agreements in a binding form.
3. The services in the rail terminal shall be fully coordinated with the capacity allocation on the hinterland railway line. Allocated capacity remains stable during the time table period and, in the case that it has to be changed, facility operators and infrastructure managers coordinate among each other and consult with the applicant before a revised train path is allocated.
4. A performance scheme as part of the infrastructure charging system shall be put in place to reward punctual operations and penalise the causation of disruptions and delays.
5. Performance targets in the form of indicators shall be agreed and there shall be a regular reporting on the compliance.
6. Potential applicants and shippers shall have access to topical reports on the service quality of the service in the port terminal.
7. Implementation of the use-it-or leave-it rule: Where a rail service is not provided over a longer period of time, interested users may decide to provide the service themselves using the existing infrastructure and port facilities, including shunting locomotives and fuel pumps.

Taking the above prerequisites into consideration, size of the port, decision criteria and the present rail volume into consideration, the appropriate organisational models for infrastructure as well as the organisation of the railway operations should be easy to implement, without conflict with regulatory and competitive issues, in full conformity with the rail port policy laid down in the respective EU

Directive since the port operators as well as the shippers wishing to use the Port of Ploče will not be confronted with a monopolist rail undertaking, in accordance with the transport volumes carried by rail to/from the Port of Ploče that is, at the moment, too small for the port to establish its own port rail services, be it by concessioning or by the Ploče Port Authority itself.

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