Transport function vs post-industrial identities. How far does urban restructuration really threaten river transport capacities in Rhine ports?

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The Rhine ports are locally at the heart of two major economic evolutions within developed countries that have to adapt themselves to the changing world economy. From the 1990ies onwards, new urban settlements were realized along the Rhine (in Duisburg, Düsseldorf, Cologne, Strasbourg or Basel) that ensured for great architectural ambitions as part of globalized city marketing. The projects were launched more or less at the same period, in the second half of the 1990 and started about ten to fifteen years later. A fierce emulation is for sure taking place, encouraging new and more ambitious realizations. On the other hand, global economy needs unprecedented transport capacities by river. Those trends apparently oppose immaterial, mostly knowledge based activities to material flows of production and consumption. In this perspective the present paper tries to set up a typology presenting the several development paths followed by the Rhine cities.

1. Rhine River fronts as a post-industrial challenge

The port regeneration can be presented as an icon of the contemporary unveiling at the same time the increasing evolution towards social inequality and economic value based upon the acceleration of trade. The first success in North America (Wang, 2002) came over to Europe. They established an image of new urban districts conceived for the wealthiest part of the population. Big flats, marinas, office building and areas devoted to recreation activities. The working class was faced to a gentrification process and lost at the same time its job and housing giving a visible shift from production to services. The process of de-industrialization in ports has also been accelerated by the containerization of goods (Desfor et al. 2011). On the Rhine, almost every important and middle sized city is now concerned by the process, willing to valorize to high density of urban land use what they generally regard as industrial wasteland or at best underused urban areas with potential. After Uwe Stöckner (2005) 60% of port revitalization on Rhine riverbank are planned to reinforce the centrality of the city, 30% in order to rehabilitate public space on the rivers banks and 14% to strengthen port activity by concentrating its traffics. The architectural character give an esthetic and historic touch that offers unconventional spaces for lofts and representative buildings for offices. So that port architectural heritage is also part of a new attractiveness: for the Media in Düsseldorf and Cologne, for the finance in Francfort, for biotechnologies in Basel. The creation of jobs is here an important argument about 8400 in Düsseldorf’s Medienhafen, 2100 at Rheinhauhafen in Cologne and 5000 in Innenhafen Duisbourg (NRW, 2010). In Basel the new Drei-Länder Quartier is to increase the inhabitants number by 20 000, the same amount as in Strasbourg for the urban expansion of the “Projet des Deux Rives”.

2. Counter-arguments defended by port authorities

Supporter of port activities and their representatives, the local Chambers of Commerce (IHK) and especially the BÖB (The German Organization of Public River Ports) are following with great concern the new urban development. Their position is rather alarmist as they present the land devolution as an irreversible process that cannot easily be compensated by new installations. The possible sites on water are under strict environmental protection that makes a new implantation difficult by imposing long and expensive procedures and generally also arise fierce opposition of neighboring communities. The port expansion in Godorf, south of Cologne illustrates such an intricate situation. The lost of already existing terminals is also an economic loss by the fact that they generally already equipped. Furthermore the new proximity and in some case a functions mix of port and urban activities may lead to more accurate cohabitation conflicts. The security rules impose imposes buffer
zones reserved to lighter economic activities and can initiate a progressive abandonment cycle. A recurrent demand of port supporters is to secure the port perimeter once for all to prevent all kind of possible domino effect.

The position of port supporters is not only defensive since new perspectives arose in IWW by the intensification of the hinterland sea ports traffics. The Rotterdam port aims to reach 47% of the traffic to alternative modes in 2035 as it is 35% today with the Maasvlakte II terminal. The port of Antwerp hopes by infrastructure investment to improve to lower the modal share of the road from 57 % today to 44 % in 2030. This relative increase demands a more important quantitative challenge yet for rail (+36%) and waterway (+ 27%). It imposes a multimodal role and an increasing logistic function for the port along the Rhine. To be able to respond to the new demand the river ports have to dispose of enough land capacities to handle the container flows and take advantage of this opportunity to create service and added value in warehousing and logistics activities. On such basis, the Land North Rhine-Westphalia in its report Hafen-Konzept NRW (Planco 2008), estimates that regional container flows will be three time as numerous in 2025. It imposes a new policy proposition to preserve and if possible extend the land devoted to port activities. The need for each EVP handled at 0.6 square meter is a little more than the value commonly in use in sea port terminals. For the Land North Rhine-Westphalia Planco estimates the new surfaces needed at 320 hectares (of which 160 directly on water) partially satisfied by existing land reserve (220 ha). But some places, among the most important ports do not have any land free for new settlement (Neuss, Dusseldorf, Cologne).

3. Shade variations in the grey zones

One has to recognize that the municipalities are systematically opposed to port activities in urban areas. Some of them directly support the modernization on existing sites. The municipality of Neuss for instance rejected a profitable project based on offices buildings to rent the site to a logistics provider (NRW, 2010). On the contrary, the city of Düsseldorf right across the Rhine continues to develop the progressive substitution of the traditional port activities by high level services. The remarkable success of the Medienhafen encourages continuing the urbanization engaged, playing here spillover effect (Fläming, 2012). In various places, the decline of the traffic in a technical obsolescent environment leads towards a non-conflict transition. The port traffic in Münster on the Dortmund-Ems-canal diminish that much that it hasn’t sense any more to maintain a port. The nucleus of the Duisburg port, the so-called Innenhafen lost almost any commercial significance by the time. The basin is a few kilometers away from the Rhine and can only be reached by a narrow and outdated lock. By the way, its 50 hectares (3,5% of the 1350 hectare port extension) represent only a small fraction of the overall port surface. Facing a severe depopulation, the core of the industrial Ruhr needed to restore its urban image by this revitalization and as a tool to attract the headquarters of the transport and logistics services firms. Relatively high costs of modernization and the improper location prevent from further modernization attempts. The former parcels and the quay lengths adapted to ship handling or the ancient warehouses with their several floors lost almost any functions. Furthermore the land availability in most of the case is not sufficient to accommodate space consuming modern activities. Finally, the traffic that it would generate cannot be reconciled with existing infrastructures without important investment to meet the necessity of accelerated throughput by road, i.e. a direct access to the motorway. Uwe Stöckner estimates in her research that in 60% of the cases,
Urbanization process proceeds from port activity withdrawal, in most of the case assumed by the port authorities themselves (see also Zimmermann quoted by BÖB, 2007, p.5). Urbanization is not the only way to revitalize unused or underused port areas. Other river-connected functions may be promoted, more directly linked to the existing infrastructures as tourism terminal, which can take advantage of the proximity of the city-center. In Cologne-Deutz, the counter-proposition to the classic marina would be to develop a maintenance center that also could serve as an emergency technical support for tourism cruise boats as the majority of them call at Cologne. Such a solution would present further benefits: the partial reversibility to good transport and the compatibility with urban logistics and the job creation directly connected to river. Another option is to concentrate the port handling activities on specific sites that would be more efficient by an oriented modernization. The traffic intensity measured by quay length varies from 1 to 7 (Stöckner 2005, p. 97) which suggests in many cases important productivity gains. In Frankfort/Main, where the West Hafen completely closed down. The local economic actors accepted to be relocated on other port sites (Ost-Hafen or the nearest Gutleuten Hafen). The power plant that could be removed without great economic losses has been integrated into a completely new and urban environment. The same process took place in Basel for the historic St Johann port that was badly accessible by rail or road.

The port redevelopment can also been seen as an economic opportunity for the port administration. First the new spatial distribution may be more efficient as it is followed by modernization investment. The transfer of property includes potential benefits that can be reinvested into port infrastructures. That may not especially concerns only the river side, but also serve improving the land connection (i.e. the electrification of the rail track within the port area to accelerate the CT offer and so the whole competitiveness of the place). Some port administrations prefer not to sell directly the land to promoters and try to so a higher profitability by taking participation shares in a common society responsible for the real estate operations and generate regular revenue in the future. At the same time, as a shareholder or even land owner it can more easily exercise its right to prevent any developments that could present an obstruction the remaining activities. Property is here also used as a guaranty to maintain the desirable balance. The most risky development procedure is the choice of a mix function. In this case a buffer zone with less aggressive and polluting implications for the neighborhood has to be created. Certain new protections have to be set (noise-reduction barriers, green curtain etc.). In Neuss a new hall has been realized to lower the emission of noise and dust in steel activities).

By short expansion possibilities, other options should be regarded. First the possible mutation of industrial land or re-use of brownfield redevelopment. That can be direct on water and receive new terminals (like Log part 1 & 2 in Duisburg). The multiplicity of the public ports along the Rhine, by the average of one every 16 km between Karlsruhe and Emmerich, is an incentive to tighter cooperation. The movement of concentration seen by the economic actors is a sign that has been followed with diverse intensity by almost all ports. One of the item discussed is the pooling of resources in land management and joint use of terminals to optimize existing capacities, like the merging of Neuss and Düsseldorf (and 45% in the port of Krefeld) and later with the HGK (Cologne). In some case, the complementarity is quite obvious, between the major ports which have the financial and technical abilities to develop logistics services and the secondary ports which dispose of the land. Progressively the ports develop, partly because of the land shortage, into regional networked systems interconnected by water but also by rail and road. This evolution helps
minimize the sterile competition between neighboring ports by specializing and thus increase efficiency of existing terminals. It is clear that the dynamic of the metropolization caught back the port system around half a dozen of major hubs that have already been identified.

4. Elaborating a typology of the changing Rhine ports in an urban perspective

The global situation of each port can be shortly summarized as resulting from the combination of a double pressure imposed on one side by urban demand and on the other by logistics dynamism. Our graphical models show a first conversion trajectory that has to be completed by a more quantitative approach. The presence of the river introduces a dissymmetric development of the urban zones, from the historic core to the outer suburbs. It generally divides it functional area into two administrative circumscriptions, that can corresponds to regional boundaries in the Middle Rhine and to international borders in the Upper Rhine region. In some cases, these borders are becoming less pregnant but following the same trend that introduce a degree in variation that have more importance by going upstream. It can happen through communal incorporation (cf. Cologne Deutz), within the metropolitan areas (Rhein-Neckar) or more recently through cross border cooperation (cf. Basel). The second thematic element is the position and expansion of the port sites within the urban zones. Their locations are determinate by the historical and technological developments from the port the commercial hub near the city center (Stadthafen), the further development by the turn of the twentieth century and its later modernization as a production site (Industriehafen). Initially located at the edge of the city, it has been progressively integrated into a built environment. Finally the more recent port creations set as specialized terminals.
Conclusion

The dynamic largely observed in sea ports for the 30 last years is now gaining river ports. The container system profoundly affected the traffic and its location demand. But the desire to create a new urban relationship to the riverside seems to collide with the port demand to protect its industries and further increase its capacities. The numerous examples of new and attractive projects from Cologne to Basel illustrate large consensus on urban port evolution as a central issue for urban redevelopment and expansion of the city core functions. In most cases, the prestigious buildings are the ultimate showcase of a new way of living and promoting contemporary urbanity. The quantitative need and offer of land for port activities may temper the excessively alarmist position of the river port lobbies. Port revitalization is not to be systematically condemned. On the contrary, it may help modernizing port infrastructure by concentrating the traffics and adapting it to the new technical environment. The urban sites that have been transformed were largely in outlying location in a port perspective and suffered from bad technical characteristics. On the other hand, they represent a unique financial opportunity to support the process of port reorganizational. The question of land claim can be must also be understood as the port double requirement: to stop the instable situation that discourages new investment and to program a port redevelopment with public support. The Land of North Rhenania Westphalia has shown the direction by looking how to guarantee the port territorial existence by reviewing legal procedure. New legal dispositions could create a new balance of power in favor of the ports. Such a restrictive legislation has less chance to be applied elsewhere. It is also important to underline the leading role of NRW as a possible actor in regional
coordination and integration of river ports and waterway policy, domains where legally the 
municipality on one hand and the federal government were only responsible for. In fact 
Berlin supports its intervention as a clear sign to give priority to a hierarchic river port 
system and public investment a position than is not far away from the European Commission 
position.

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