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► **To cite this version:**

Nicolas Raimbault. Planning and Financing Logistics Spaces. International Encyclopedia of Transportation, Elsevier, pp.35-40, 2021, 10.1016/B978-0-08-102671-7.10214-3 . hal-03273392

**HAL Id: hal-03273392**

**<https://hal.science/hal-03273392>**

Submitted on 10 Jan 2022

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# Planning and Financing Logistics Spaces

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Raimbault N. (2021), ‘Planning and Financing Logistics Infrastructure’, Vickerman R. (ed.), *Encyclopedia of Transportation*, Elsevier, pp. 35-40. <https://doi.org/10.1016/B978-0-08-102671-7.10214-3>

## Abstract

A large range of logistics spaces – seaports, intermodal terminals, logistics parks, distribution centres, urban logistics facilities – have been built during the last decades in order to connect the production of goods to their consumption and their recycling. This chapter proposes an exploration of the way current logistics spaces are planned and financed by the different public and private actors involved. It highlights the impacts of planning policies and financial circuits on their spatial and institutional configurations. In this perspective, along with their logistics roles, the chapter underlines three main dimensions of the current systems of production of logistics spaces: the modalities of the financialisation of logistics properties, the scope and effectiveness of planning policies for logistics facilities and the scope of traditional public infrastructure regulations and management regimes. These three main dimensions are indeed the three central variables of the existing modes of governance of logistics spaces.

## Keywords

Logistics spaces, logistics zones, international gateways, urban logistics facilities, infrastructure, urban and regional planning, financialisation of real estate, mode of governance, land use planning, privatisation.

## 1. Introduction

Logistics encompasses a diversity of activities concerned with the management and the operation of goods flows, including transportation, handling and packing, warehousing, transshipment, pre- and post-manufacturing and supply chain management. Within this large economic sector, three main logistics functions can be identified: international flows, regional distribution and city logistics. The management of international flows is a crucial task in a context of global production and distribution networks (Coe, 2014). International flows mostly rely on maritime and air transport modes – key infrastructures are thus seaports and airports. However, most goods flows are national or regional and are managed by regional distribution systems. They depend on, mainly, road and, secondary, rail and river transport modes. Warehouses, often called distribution centres (see section 2), represent crucial nodes to (re)organise shipments within regional distribution systems (Hesse, 2008). Intermodal terminals can be needed for transshipments from the different transport modes. Eventually, city logistics, also called last mile logistics, corresponds to the final step of the delivery process. It is mainly performed by light trucks even if greener vehicles (electric vans and cargo

cycles...) are now being experimented with. These logistics services can need specific facilities in dense parts of metropolitan areas (Browne et al., 2019). Most logistics flows articulate these three functions, which are required to connect the production of goods to their consumption and their recycling. Thus, a large range of logistics spaces – seaports, intermodal terminals, logistics parks, distribution centres, urban consolidation centres to name a few – have been built during the last decades in order to perform these different logistics activities.

The diversity of logistics spaces, however, does not only reflect this diversity of logistics functions. In this perspective, the way these spaces are planned, produced, regulated, governed, financed, maintained, and accepted by local communities matters a great deal. In other words, logistics spaces display different configurations corresponding to their institutional, political, economic and social environments (Hall and Hesse, 2013).

This chapter proposes an exploration of the way current logistics spaces are planned and financed by the different public and private actors involved. It will highlight the impacts of planning policies and financial circuits on their spatial and institutional configurations. In this perspective, along with their logistics roles, the chapter underlines three main dimensions of the current systems of production of logistics spaces: the modalities of the financialisation of logistics properties, the scope and effectiveness of planning policies for logistics facilities and the scope of traditional public infrastructure regulations and management regimes. These three main dimensions are indeed the three central variables of the existing modes of governance of logistics spaces.

The outline of this paper is as follows. The second section is dedicated to logistics zones, where most warehouses and distributions centres are concentrated. Current logistics zones are embedded in historical industrial urban areas or correspond to new private business parks. In the third section, the specific mode of governance of international gateways (airports, seaports and inland ports) is analysed as part of traditional public infrastructure policies. Against these two main configurations of logistics places production, the role of current spatial planning policies for logistics facilities are investigated in the fourth section.

## **2. Logistics zones: the silent privatization of ordinary logistics spaces**

The development of logistics activities and flows entails the construction of thousands of warehouses and distribution centres which are mainly concentrated in logistics zones in urban regions. This section presents a typology of three kinds of logistics zones based on the comparison of different European and North-American case studies in the urban regions of Paris, Atlanta and Frankfurt (Raimbault et al., 2019; Barbier et al., 2019). This typology indicates the existence of different modes of logistics zone governance, corresponding to different phases of logistics development, planning and financing regimes. A comparison with case studies in other regions could reveal the existence of other modes of logistics zone governance.

### **2.1. Warehouses, distribution centres and logistics zones**

Warehouses and distribution centres (DCs) are industrial sites dedicated to logistics operations. Shippers and logistics providers both operate warehouses and DCs within their distribution networks. In these sites, four basic operations are performed: the pick-up of goods, consolidation/deconsolidation of shipments, change from one means of transportation to another, and storage. In contrast to traditional warehouses, DCs are designed in order to minimize the storage of goods and to keep goods as mobile as possible in a context of just-in-time flows (Cidell, 2015): the goods are collected from different origins, grouped in DCs and then redistributed to their respective destinations. DCs are the contemporary configuration of warehousing.

Yet, the establishment of DCs is not solely the result of corporate logistics strategies. These buildings of thousands of square meters are subject to several spatial planning regulations, as well as land development and real estate investment strategies. In most developed countries, municipalities and local communities design and implement local zoning plans that authorize the use of land for establishing DCs. They also issue the required building permits. Through this process, the real estate industry (land developers, developers and investors) come under the influence of local, public and even political power that is expressed in planning regulations or social movements. Moreover, some local governments initiate the development of new business zones dedicated to logistics facilities.

The development of logistics activities during the last decades has led to the emergence of different kinds of business zones concentrating logistics facilities. Some logistics zones are former industrial zones, while others are planned by local government or produced by property investors.

## **2.2. From industrial zones to logistics zones**

During a first period of logistics development (1970s-1990s), logistics providers and shippers, looking for sites in urban regions to build warehouses, found spaces in the large existing industrial zones of European and North-American cities. Warehouses have replaced former factories or have been built on plots that became available, when the demand for new manufacturing sites declined. This process has led to the incremental conversion of industrial zones into logistics zones.

The establishment of these logistics sites is not based on complex political negotiations, or specific real estate or land development operations. The land, generally developed by public land developers, is available for any type of industrial purpose, whether manufacturing or logistics. Municipal authorities are only asked to give their formal agreement by signing the building permits. The shift to logistics of these former industrial sites is, therefore, almost invisible; without explicit public discussion or negotiation between public and private stakeholders.

The silent conversion of industrial zones into logistics zones corresponds in this way to a first mode of governance of logistics zones, which is limited to the enforcement of generic rules of land use, and does not tilt local political agendas towards other issues of logistics industry development. It mainly takes place in the former manufacturing belt in metropolitan areas (Raimbault et al., 2019).

## **2.3 Local policies of logistics zones development**

The increasing demand for logistics spaces has led to a second generation of logistics zones corresponding to another mode of governance. Many local governments or authorities implement economic development policies based on attracting logistics facilities in order to increase their tax revenues and the number of local jobs. The implementation of this agenda consists of publicly developing new business zones dedicated to logistics activities.

Thus, local governments plan new logistics zones in their territory and invest in the corresponding land development operations and in the subsequent road (and sometimes rail or river) infrastructure. Then, they sell the plots directly to shippers or logistics providers looking for new logistics sites or, much more often, to property developers building DCs in order to rent them. Some municipalities also plan and finance rail or river container terminals in these zones, in order to strengthen its attractiveness or to favour more ecological transport modes.

In this way, the development of this second generation of logistics zones is the result of voluntarist local spatial planning policies. This mode of logistics zone governance focuses on land development issues, at the expense of other issues such as employment or housing and public transport for the workers of the zone. Moreover, these logistics zones are only planned at the municipal scale (Cidell,

2011). In most urban regions, the issue of planning logistics zones is not in the scope of regional or metropolitan planning policies (see section 4). Thus, in the absence of strong planning policies at this scale, these local policies result in logistics zones spreading towards suburban and outer-suburban areas, participating in the process of “logistics sprawl” (Dablanc and Ross, 2012). However, the development of suburban zones can meet with objections from environmentalists, which can hinder the sprawl (Barbier et al., 2019).

### **2.3. Financialisation of logistics real estate and emergence of private logistics parks**

Since the 1990s, logistics firms have largely opted for flexible real estate solutions and thus have looked for warehouses to rent, rather than building and managing their own facilities. This has contributed to the emergence of a development and investment market in logistics real estate (Hesse, 2008), which refers to the general process of the financialisation of real estate. The financialisation of logistics real estate is connected to a third mode of governance that is specific to the private logistics parks.

The logistics real estate market is dominated by international firms, which specialise in logistics and manage global investment funds. These companies take direct charge of the development of the warehouses they buy, as investment fund managers. In order to reduce their dependence on negotiations with local public authorities, they also tend to be the developers of the logistics zones in which they invest. In other words, instead of building warehouses scattered around different business zones, the industry leaders develop private logistics zones containing several warehouses. These “logistics parks” are entirely owned and operated by the same investment fund manager responsible for property management. They are fenced and protected by private security.

This business model leads to the privatisation of a number of local policies. Logistics real estate firms privatise land development policies, compared to the situation of business zones directly developed by local governments. To the extent that logistics parks are entirely private, real estate firms become the *de facto* owners and managers of the streets and green spaces that constitute the public spaces in the business parks. Moreover, the model also enables real estate companies to decide on local economic development issues, insofar as they select the firms that settle in the municipality, which considerably affects the latter’s economic specialisation and prospects.

However, logistics parks must be authorised and supported by local governments, which are responsible for issuing spatial planning documents and building permits. The production of logistics parks implies that the local authorities accept this dynamic of privatisation. Different mechanisms explain this political choice. First, some local authorities in the outer suburbs lack the financial, technical and even political resources needed for developing business zones. In order to get the capacity to attract logistics sites in their territory, they look for private investors able to establish private business zones. Second, some outer suburban municipalities argue that the private logistics park model is superior to traditional publicly developed business zones: the general design of the park and the fact that it is fenced and secure, the fact that private development and management of parks makes no demands on the public purse, eventually the fact that the property manager is solely responsible for the entire park and can be contacted directly by local governments. These different aspects of private logistics parks give local governments a greater sense of control over their territory.

This last mode of governance, dominated by the logistics real estate industry, becomes dominant in large urban regions prone to strong political fragmentations. The consequences are twofold. At the local scale, local governments negotiate only with property developers and investors. They rarely meet the users of the warehouses, the workers or even the logistics firms themselves. Managing the

relations with the firms that rent the warehouses becomes the task of the property manager alone. In consequence, logistics issues are seen as a question of real estate, disconnected from matters relating to logistics activities and employment, such as employee transport or transfer of goods flows from road to rail or river modes. At the regional scale, private logistics parks directly challenge planning policies (see section 4). As these real estate products are particularly attractive for outer-suburban areas, where local authorities do not have the resources or the desire to develop logistics zones alone, the financialisation of logistics real estate largely contributes to logistics sprawl.

The evolution of the planning and financing regimes dedicated to logistics zones, from traditional industrial zones to private logistics parks, is due to the emergence of a global financialized development and investment logistics real estate market. In a double context of weakness of planning policies for logistics facilities at the metropolitan scale and of the lack of financial, technical and even political resources in many local authorities in the outer suburbs, the financialisation of logistics real estate leads to the privatisation of the production of logistics spaces in many metropolitan areas. Besides this fragmented mode of governance of logistics zones, the management of international gateways (airports, seaports and inland ports) corresponds to a specific mode of governance tied to traditional public infrastructure policies.

### **3. International gateways: planning and financing public logistics infrastructures**

Maritime transportation represents between 70% and 80% of the total of international flows, with the rest mainly completed by air transport (Rodrigue et al., 2017). Efficient transshipment facilities from maritime and air transport to land transport modes are thus needed for international flows. Airports, seaports and also different kinds of inland ports, that complement maritime gateways, constitute the systems of international gateways. As they are framed as being of strategic importance by local and national governments, international gateways are mainly organized and managed by public or semi-public authorities, which constitutes specific modes of governance of logistics spaces. Most airports and seaports and some inland ports thus constitute emblematic cases of logistics spaces planned and financed as public infrastructure.

#### **3.1. The logistics facilities of international gateways**

International gateways are based on two main kinds of facilities. First of all, intermodal terminals are used for the transshipment of goods from maritime or air transport to land transport modes. Seaports are organized around container terminals and different types of bulk terminals (dry and liquid bulk, general cargo and roll on/roll off). These terminals are usually operated by private terminal operators, which can be subsidiaries of the main maritime shipping companies. In airports, cargo stations organize the links between airport runways and trucking. These facilities are directly rented by air, courier and express delivery companies.

Airports and seaports also concentrate numerous other logistics facilities needed for the organization of hinterland flows. On the one hand, shippers' distribution centres and carriers' parcel service facilities are located in the domain of seaports and airports in order to organize the different inland shipments at the local, regional, national and continental scales. On the other hand, some river and rail (containers and bulk) terminals are usually localized in seaports, as rail and river transport modes can be efficient hinterland transport solutions.

Several inland ports complement the major seaports. Inland ports are *"inland facilities with or without an intermodal terminal and logistics companies, which [are] directly connected to seaport(s) with high capacity transport mean(s) either via rail, road or inland waterways, where customers can leave/pick up their standardized units as if directly to a seaport"* (Witte et al., 2019: 54). They offer the services of an extended gateway within the context of seaports becoming integral parts of

extensive hinterland networks, intermodal transport corridors and inland ports (Notteboom and Rodrigue, 2005). Inland ports are located in different cities of different size, from small cities located on major transport corridors to large urban regions.

International gateways are thus complex logistics spaces, corresponding to different scales of flows, different modes of transport and different logistics services. A large variety of logistics firms are involved in international gateways, which supposes specific institutional arrangements in terms of infrastructure, land and operations management.

### **3.2. International gateways governance: the production of logistics spaces and services**

The way most seaport spaces are produced and governed is emblematic of the specific public infrastructure mode of governance. Even if there is a diversity of governance configurations, the governance of airports and inland ports generally corresponds to this infrastructure mode of governance (Rodrigue et al., 2010).

The ownership, the management and the operation of the facilities of seaports and airports are rarely entirely public or entirely private. Concerning seaports, the most common configuration is known as *Landlord port* (Brooks and Pallis, 2012; World Bank, 2007). This mode of governance is based on the separation of public and private spheres of intervention. A public port authority (PA) is responsible for the production and the maintenance of the port spaces, while the private operators are responsible for the production of the different logistics services and the private facilities needed for them. In some seaports, especially in England (Baird, 2006), the ownership, the regulation and the operation can be the responsibility of the private sector. This mode of governance, known as *Private Service port*, remains much less common than the Landlord port. The ownership of airports is often public, while the management of the infrastructure can be entrusted to a private operator under a concession contract. Some inland ports are governed by PAs according to the principle of a Landlord port. The next sections develop the way logistics spaces are planned and financed in the case of a Landlord port. This configuration corresponds to the most common mode of governance for international gateways.

PAs are organized as public corporations that are accountable to a local (municipal or regional) government (for instance: the case of Antwerp in Belgium or Los-Angeles and Long Beach in United States) or a national government (the case of Marseille and Le Havre in France). They produce and maintain port spaces with an overarching goal of financial self-sustainability. Besides public subsidies, most of their revenues come from port dues and land leases. Thus, PAs aim to increase port traffic, in order to collect port dues, which is supposed to finance and supply plots for efficient terminals, and land uses, in order to increase their land revenues, which is supposed to finance and supply attractive plots for industrial sites.

In a Landlord port, the PA owns the land and the collective infrastructure (docks, roads, railways and waterways). It manages nautical issues, land use planning and the promotion of the port in general. The role of the PA is thus mainly focused on the production of different kinds of port spaces. It finances, produces and maintains the infrastructures mentioned above. Moreover, it acts as a public land developer in order to attract two kinds of companies in the port domain. On the one hand, it produces terminal land (docks, wharfs and quay walls). Private terminal operators rent the land through long term administrative leases and finance the construction of the terminals they operate. On the other hand, in the rest of the port domain, it also produces the land plots that enable logistics or manufacturing firms to establish industrial sites in the port domain. These firms contract administrative leases for the lots where they construct and own their distribution centres, parcel service facilities or factories. In the context of the financialisation of logistics real estate, numerous

property investors lease land in seaport domains in order to build distribution centres to rent. In this way, even with the growing importance of property investors, the land remains under public ownership and control.

The planning of the different facilities and plots are negotiated with local or national governments according to the local and national institutional configurations. The autonomy and the financial responsibility of PAs are important in this domain. Besides, the major strategic projects, such as port extensions or the construction of new transport ways towards the port (railways, waterways or highways) are planned and financed with local or national governments that exert control over PAs, in the framework of transport infrastructure planning policies.

PAs are not only concerned, therefore, with the production of spaces, but also with the flows and logistics services issues. The negotiations on the leases are a tool enabling port authorities to choose companies that will generate traffic or, from a sustainability perspective, greener practices (e.g. river and rail traffic instead of road traffic, slow steaming). PAs usually develop strong relationships with the companies established in the port domain. They can then provide advice and sell business research services. With the companies forming port communities, PAs act as managers of “port clusters”, which are characterised by “various forms of coordination and resource sharing as a consequence” of the cluster of firms in the port (de Langen and Haezendonck, 2012: 638).

The management of international gateways corresponds in this way to a specific mode of governance tied to public infrastructure policies. The public control on the production of logistics spaces and the involvement of PAs in flows and logistics services issues clearly contrast with the privatized production of logistics parks and the indifference of local governments over logistics issues. These two parallel modes of governance of the logistics spaces are thus often at work in cities and regions. The next section analyses the potential articulation of these two modes of governance within emerging planning policies for logistics facilities at the scale of metropolitan areas and regions.

#### **4. Planning policies for logistics facilities: between regional planning and local urban logistics innovations**

Logistics is now included in most regional and metropolitan agendas, framed mainly as an issue of sustainability. It leads to spatial planning policies for planning facilities and to policies favouring greener city logistics practices.

##### **4.1. Regional and metropolitan spatial planning policies**

Regional and metropolitan spatial planning policies have increasingly included logistics spaces issues, often framed as an issue of sustainability. For instance, in the Paris region, regional planning documents aim to limit the logistics sprawl in order to reduce the urbanization of new spaces. The logistics sprawl is also framed as being at odds with the goal of modal shift of freight flows from road to river and rail modes (Raimbault et al., 2019). However, as developed in the second section, the governance of logistics zones development remains essentially local in most urban regions. Indeed, despite these ambitions, regional or metropolitan planning policies are rarely legally binding for municipal land use plans. Comparison between US metropolitan areas, the Paris region and the Frankfurt metropolitan area shows that Paris region planning policies include logistics issues more clearly than in the US metropolitan areas (Raimbault et al., 2019) and that land-use legal restrictions are weaker in the Paris region than in the Frankfurt case. As a consequence, Frankfurt’s planning regulations restrict the space available for logistics, reduce logistics sprawl and the development of huge private logistics parks compared to the Paris region and US metropolitan areas (Barbier et al., 2019).



In this context, seaports, airports and inland ports can be considered as public tools for implementing logistics regional planning. Against the fragmented governance of logistics zones, a planning solution consists of working with the already existing public authorities dealing with logistics spaces such as (air)port authorities. This situation explains the role of river port spaces and institutions in the regional planning policies of the Paris region (Raimbault, 2019). Indeed, the Paris regional master plan aims to concentrate the development of logistics sites around the main rail and river terminals, which corresponds to spaces managed by the river port authority. In this way, the public infrastructure mode of governance meets some goals of the regional planning policies.

Eventually, spatial planning policies also aim to preserve spaces for urban logistics sites in dense urban areas close to city-centres.

#### **4.2. Local urban logistics innovations**

Besides spatial planning, in order to limit “logistics sprawl,” and thus to comply with sustainability goals, some municipalities facilitate the supply of logistics facilities in inner areas. The literature provides several examples, mostly in Paris and Tokyo (Diziain et al., 2012; Raimbault et al., 2019; Dablanc, 2019), of policies developing new formats of urban warehouses in city centres and dense urban places.

In this domain, flagship projects consist of multi-story urban buildings, where logistics activities (consolidation centres, rail terminals, small storage facilities) coexist with several types of activities such as housing, offices, sport and leisure facilities or even datacentres. The purpose of cohabitation is that these activities bear a portion of the cost of building and land, since they are more profitable. This financial equalization strategy would allow logistics to return to dense urban areas at an acceptable cost.

While private real estate investors are involved in the development of suburban logistics zones, they are just emerging in the development of dense urban logistics buildings. The latter are generally developed by public stakeholders backed by municipalities, as the profitability of such real estate operations are still hazardous. The support of public authorities is crucial in these projects, which can slow down the diffusion of this type of logistics format, as it can make investors risk averse. Urban logistics infrastructure has, to this day, relied mostly on the public initiatives of municipalities, which indicates a third mode of governance of logistics spaces.

#### **5. Conclusions**

The chapter underlines three main dimensions of the current systems of production of logistics spaces: the modalities of the financialisation of logistics properties, the scope and effectiveness of planning policies for logistics facilities and the scope of traditional public infrastructure regulations and management regimes. The different combinations between these three main dimensions explain the coexistence of different modes of planning and financing logistics zones, international gateways and urban logistics infrastructure.

At the metropolitan scale, the result is a ‘dualization’ of the governance of logistics spaces (Heitz, 2019). On the one hand, international gateways and urban logistics facilities are governed thanks to specific public planning and financial tools. On the other hand, suburban logistics zones are prone to strong privatization dynamics and largely remain out of the scope of regional planning policies and regulations.

These conclusions indicate two main research perspectives. First, the analysis of the coexistence of different modes of governance should be developed through new systemic approaches to the coevolution of the different spaces and modes of governance of logistics dynamics, for instance at the scale of urban regions (Raimbault, 2019). Second, as this chapter is mainly built on European and North American case studies, these findings should be challenged by future international comparisons with Asian, Latin American, Middle-Eastern and African case studies.

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## **Biography**

Nicolas Raimbault is an Assistant Professor at the University of Nantes, researcher at ESO (Espaces et Sociétés, UMR CNRS 6590, France) and research fellow at Luxembourg Institute of Socio-Economic Research (LISER, Luxembourg). He teaches urban geography, urban planning and urban policies and his research deals with the urban and social impacts of logistics activities development. His current work investigates the transformations of blue-collar places and their governance in the dual context of the rise of logistics blue-collar jobs and the fall of manufacturing jobs in European and North-American urban regions. He completed his PhD in urban studies in 2014 at Paris-Est University. His PhD thesis studies the governance of logistics development in the Greater Paris Region and in the inland corridor of the port of Rotterdam in the Netherlands. He also received a Master's degree in regional and urban affairs from Sciences-Po Paris.