

*Markus Hesse*



# The City as a Terminal

The Urban Context of  
Logistics and Freight  
Transport

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MARKUS HESSE

*University of Luxembourg*



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# Preface

The contents of this book originate from several years of research on the relationship between city and region on one hand and logistics and freight distribution on the other hand. This subject remained somehow hidden for a considerable amount of time, since spatial science in general and urban, economic or transport geography in particular did not investigate logistics changes and their spatial outcomes, except a handful of studies that had been conducted either in the 1960s or more recently in the 1980s and 90s.

The starting point of the research was the observation that many of the developments and problems associated with what was then called “urban logistics” – such as congestion and truck traffic, noise emissions and air pollution, land use and community issues – had been shifted toward more remote places, particularly toward suburban areas, as a matter of corporate locational behaviour (Hesse 1998). As a consequence places which were formerly dedicated to the transshipment and handling of goods, namely city ports and warehousing districts, became transformed and redeveloped to urban waterfronts or loft houses. In contrast to the rising awareness that these urban transformations had received, only little attention has been paid to the locales where goods distribution had moved to: sub- or even ex-urban areas with excellent transport access and apparently unlimited supply of cheap land. Paradoxically, it was the advent of the Internet and the often exaggerated emphasis on the immaterial, volatile cyberspace that had subsequently re-shifted the focus on material flows and places.

Meanwhile, a rising interest has been directed towards the issue of mobility and flows in geography (cf. Hall et al. 2006). This is due to new corporate strategies in manufacturing and distribution, the application of new technologies, also an increased competition and the challenge of globalization at all. As a consequence, new logistics networks emerged, consisting of nodes, hubs and flows in a broad range of interaction. Thus logistics and freight distribution became the transmission belt for global trade and expanded production systems. In this context, places that function as the interface between sender and receiver, shipper and customer have attracted special attention: port areas, export processing zones, logistics parks that host distribution centres, dedicated freight rail yards, commercial and industrial areas with wholesale trade, retail distribution and freight forwarding, just to name a few but important examples.

Against this background, the particular interest of this study was to investigate the emergence, dynamics and character of some of these places. As a research subject, they are considered being “hybrid” – a compositum of industry and services, of derived and intrinsic activity, a driver and a product of industrial structural change, and finally an outcome of both the global and the local. As far as the study

tied up to earlier inquiries into the characteristics and conflicts of urban freight distribution, it was particularly concerned about corporate decisions for leaving urban areas and relocating elsewhere. The study also dealt with the rationale for other firms to remain in the core city. Moreover, the shift of distribution firms to the urban periphery or even beyond has been assessed in relation to earlier processes of commercial and industrial suburbanization, looking at the potential consequences for both the city and the suburbs. The findings reveal in more detail how firms are assessing these different and often contradictory advantages and disadvantages of urban places, in order to identify the optimal, or at least “second best” mode of operation and the appropriate location. Consequently, the study is also about how public agencies, such as municipalities or regional development agencies, are dealing with logistics and freight distribution, both as a problem and as a potential.

This study is geographical by nature, since it attempts to shed light on the relationship between fixity and motion, between place and mobility. Places that are dedicated to organize flows can actually be considered a contradiction by definition. Speaking in terms of David Harvey (1989), the commitment of logistics to optimize time is associated with a certain “annihilation of space”. In so doing, logistics constantly works at reinforcing the de-territorialization of the economy, since it allows for not only to move commodities but to re-position economic activity. However, in contrast to other fields of economic geography research, there are no vital signs indicating that a certain re-territorialization of this sector is underway, as it is the case e.g. with the knowledge economy and the related networks or clusters. Yet, even the emerging greenfield investments in container ports, “freight villages” or “cargo cities” (sic!) at airports and in newly developing off-shore facilities may depend upon establishing a new territorial context. Though logistics is primarily not about place, it is about organizing flows as efficient as possible, thus enabling places to participate in the increasingly connected economy. Consequently, it is of major interest for the discipline to learn more about the territorial arrangements and entities that are resulting from the particular interplay of fixity and motion that is embodied by logistics changes. Keeping in mind the rising interest in flows and mobility expressed by social sciences in general and human geography in particular (Crang 2002), there are significant issues to be addressed.

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Several people were instructive once this manuscript and its original predecessor on “Goods transport and logistics in the process of urbanization” had been put together, notably Sabine Meister (cartography), Britta Trostorff and particularly Steven Bayer for data processing, GIS and related activities that helped making the text presentable. Anne Beck from the Faculty of Geosciences of the Freie Universität Berlin was very supportive by providing English translations of chapters, also Diana Hömann who gave the manuscript a careful proof-reading.

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# Introduction

## The City as a Terminal.

### Logistics and Freight Distribution in an Urban Context

#### **Background and Rationale of the Study**

The exchange of goods is a constant feature of human economic activity. It was once essential for the rise of the mercantile economy in medieval Europe (Braudel 1982) and became a large scale activity during the industrial revolution. The location of industry and thus the geography of manufacturing in general evolved with respect to accessibility improvements that were particularly offered first by ocean shipping and inland waterways, later by railways which were then predominantly freight related. Vice versa, every “long wave” in the process of industrialization embodies distinct transport orientations and appropriate infrastructure requirements (Hayter 1997, 27). This was true for the railroad in the Fordist economy, as it is for the trucking and air freight modes more recently. Even the modern information and communications technologies may currently represent just another step in this incremental co-evolution of economic development and physical distribution, rather than to disrupt with earlier stages and to bring about totally new modes of value creation.

The spatial organization of economic activity has been fundamentally transformed over recent decades, as an outcome of structural changes, new technologies and particularly globalization: the expansion of world trade, manufacturing and goods distribution across the globe. It is often overlooked that the rising exchange among different parts of the world is associated, first, with logistics organization, comprising the management of the supply of raw materials and components, goods manufacturing, and the physical distribution of the product to its final destination. Logistics aim at delivering consignments in the right composition (in terms of quantity and quality), at the precise time and lowest possible cost, which also equals a formal definition. Second, it requires physical activity and infrastructure, particularly the transfer of commodity shipments by truck, freight rail, airplane, waterway or ocean ship, the handling of consignments in warehouses, distribution centres (DC) and parcel stations, and the delivery of shipments to the final point of consumption. The material dimension of logistics and freight distribution remains prevalent, despite the emergence of electronic commerce and web-based management practices, promoting the image

of apparently virtual flows that need no material infrastructure and physical distribution.

However, recent innovations in technology and management have in fact led to significant changes in logistics organization and operation. This applies particularly to the integrated, upstream management of supply chains and the re-organization of distribution networks, with a much higher spatial reach than before. As a result of these transformations, logistics has changed radically since the post-war decades. It may no longer represent just a derived function which is primarily dependent on the demand for services by manufacturing or retail firms, but also a powerful system that lays the ground for a flexible, highly distributive economy. It increasingly follows a distinct logic, likely to influence related parts of manufacturing or retail, rather than being determined by the place and the time of production or distribution.

The extent to which logistics is changing the landscape is being sketched by *The Economist* as follows:

Historically, transport technology has always made a physical impact on centres of commerce. In the days when cargo was loaded onto ships mainly by hand, factories would often cluster nearby because transport costs were high and delivery slow. With the arrival of the shipping container, factories were able to move to cheaper locations and away from crowded city ports such as New York City and the London Docks. Container terminals did not have to be so close to large population centres, provided they had plenty of space, railways, goods roads and workers prepared to handle containers, which many stevedores in older ports were not. Somethin similar is now happening around logistics centres, especially at airports. Companies are moving some or all of their operations to be near such centres because this allows them to process orders late into the day and put their goods on the last flight out, for delivery the following morning. [...] The idea that if you build a logistics centre companies will come is being taken to extremes in the United Arab Emirates. [...] Now Dubai is building what it describes as the world's first "logistics city". (*The Economist*, 17th June 2006, 13)

There is no doubt that the spatio-temporal extension of goods movement has important implications for urban and regional development. Access to markets, linking supply of and demand for goods, being a "central place" for city and hinterland as well as for distant trade have played a major role in the emergence of the city, both in mercantile and industrial ages. Large technical systems such as logistics and freight distribution are embedded in a particular spatio-temporal framework: they require certain material facilities, infrastructure and "space for operation", thus re-arranging the conditions of space and time in a broader context. Sufficient logistics capacity determines accessibility and influences the economic prospect of certain places, so the precise functionality of delivery is still an important factor of the urban and regional economy – even if these places are under increasing pressure of cost reduction and on-time functionality.

Despite this basic significance of logistics and freight distribution, neither geographical studies nor transport research paid any particular attention to this

subject until recently (see the overview in chapter three). Spatial studies still lack a considerable understanding of logistics organization and freight distribution, which particularly applies to the role that cities and urban development play in this respect. In turn, the relationships between logistics and spatial or urban development are widely neglected by business management and freight transport planning, both being the traditional disciplines of logistics and freight-related investigation. Even the emerging study of global commodity chains pays little if no attention to the underlying framework of physical distribution and the respective role of infrastructure, connectivity or transport costs. Judging from current geographical research, logistics and freight distribution remain a “missing link”: between the widely investigated new production systems and the outstanding work on (post-) modern consumption patterns. This study is an attempt to link these fields together and to illuminate the fundamental role logistics and freight distribution play for urban and regional development. Moreover, the study tries to prove how logistics and freight distribution are influenced by spatial structure and variation.

### **Main Hypothesis and Theoretical Angles**

The main statement of this book is that modern logistics is shaping urban development and urban land use, as a consequence of new supply chain organization and logistics network design. This transformation of urban places includes, first, the re-development of warehousing districts, inner-city rail yards and freight consolidation facilities, in favour of more valuable and competitive land uses, such as housing, retail or business services. This phenomenon also applies to the increasingly popular conversion of city ports into urban waterfronts. The underlying rationale is based on changing preferences by logistics and freight distribution firms that had disadvantaged core urban areas, particularly the demand for “big box” space and the imperative of high-throughput distribution in 24/7 modes. Both properties can no longer be offered by inner-city locations, since both land rents and sensitive land uses do not permit the ongoing spatio-temporal extension of logistics and freight distribution.

Second, as a consequence, facilities that host logistics services are increasingly being re-located toward strategic places within and beyond urbanized territory. This applies particularly to functions such as storage, consolidation and high-throughput distribution of consignments. The related structural changes are creating new geographies of distribution, as an outcome of supply chain re-organization and logistics network design. They can be observed at all spatial levels, e.g. in port regions, which are the major nodes of the global supply chains, yet also in ordinary agglomerations, where land is scarce and both agglomeration disadvantages and regulations are driving distribution land uses towards the periphery.

The resulting shift out of urbanized areas toward sub- or ex-urban places has already been labelled as “port regionalization” in the case of port regions, or as “logistics polarization” in more generic terms. These movements imply more than



just spatial shifts, as they are shaping the function and the character of urban places: They affect both the traditional role of the city as a centre of goods merchandising, which is becoming re-designed under the flag of globalized distribution regimes, as well as urban structure and urban land use. Whereas both spatial tendencies, the move to the suburbs and the preference for remaining in core city areas, can be confirmed as a regular locational practice of distribution firms, the former appears to be the predominant pattern. This is particularly the case since logistics is increasingly performed by major corporations that operate large-scale networks, with expanded spatial reach and particular emphasis on mobilizing economies of scale. This business model can hardly be practised in core urban areas, as this requires extensive space reserves and unimpeded traffic conditions.

Accordingly, the book investigates two different spatial dimension of logistics and freight distribution: it discusses the generic urban attachment of logistics functions and related processes of dissociation from the city, and it also focuses on urban-regional locational dynamics and conflicts, with particular emphasis on suburban areas as the major logistics “organization space” which emerged due to changing organizational settings and locational requirements. In the latter section of the book, planning and political regulation of such land uses are discussed as well, since the steadily expanding system of physical distribution exerts a significant pressure on urban areas, on neighbourhoods adjacent to freight sites and on the transport system. The related theoretical background of the study is based on a combination of different approaches from economic and urban geography, reflecting the hybrid character of the subject, and it aims to illuminate the interrelationship of three basic processes:

- the modernization of corporate logistics (by shippers, freight forwarders, courier and parcel services and also wholesalers) in the context of a flexible production and distribution organization;
- the determination of location-choices of such companies according to logistical, transport and space requirements;
- the urban development with respect to the distribution function and particularly the contribution of logistics to the dispersal of the urban region.

The related multidimensional research concept draws upon a trans-disciplinary perspective, including the following three angles:

First, against the background of sectoral shift and technological change, the study discusses the post-Fordist economy and flexible specialization which are emblematic for late-industrial change, particularly the establishment of decentralized production networks (Dicken and Thrift 1992). These production systems imply, if not dissolution then a re-arrangement of the locational fixity of the single firm. Logistics and freight distribution are an inherent part of the resulting large scale value-added chains and networks in the sense that they enable economic actors to organize these chains and networks at a great distance.