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The Strategic Position of Metropolitan Areas in the European Network Economy

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**THE STRATEGIC POSITION OF METROPOLITAN
AREAS IN THE EUROPEAN NETWORK ECONOMY**

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1. The European Network Economy: Introduction¹⁾

European countries and regions are gradually moving towards a network economy, where important nodes of economic, cultural and technological progress are linked together by a well connected infrastructure network. Especially after the approval of the Maastricht Treaty the notions of inter-connectivity, inter-operability and inter-modality have gained much popularity, as they refer to the potential of various actors to realize value added and economic benefits as a result of integration of nodes and modes in a network. In the past years much attention has been given to the need for improving the quality of modes in the European infrastructure network (see Nijkamp et al., 1994), but far less attention has been devoted to the competitive potential of Modes. Such Modes may of course be mainports in a physical network (like international airports or harbours), but it seems to be more important to focus attention on major metropolitan areas in Europe and to investigate how such international centres are improving their competitive advantage along two lines: improved connectivity with European infrastructure systems and improved quality of intra-metropolitan infrastructure. In this paper we will focus in particular on the latter issue.

In the past decades, virtually all Western European countries have witnessed a considerable growth in transport demand. Especially passenger car traffic has risen explosively, which has led to increasing levels of air and noise pollution, and landscape deterioration (including visual pollution). Since investments in transport infrastructure have not grown to the same extent, also congestion is causing serious problems. Given current transport policies in Europe, it is plausible that the friction between growing mobility and current transport infrastructure will further increase, especially in metropolitan areas.

¹ The background information for this article can be found in the report "Public Transport Systems in European Metropolitan Areas" (Nijkamp and Oosterman, 1992a; in Dutch) where eight metropolitan areas in Europe have been investigated. These areas are: Brussels/Antwerpen, Copenhagen, London, Milan, Munich, Paris, Randstad Holland and Stockholm.

At the same time, a process of far-reaching economic restructuring is taking place. Developments in information technology lead rapidly to new products and new production processes which in turn affect the competitive and locational behaviour of private companies. Labour-intensive activities are increasingly shifted to cheap labour countries, while knowledge-intensive functions are located in information-rich urban 'milieus'. The broadly recognized need to generate and attract knowledge-intensive industries has led to an ever increasing competitive battle between urban areas, which is reinforced by the creation of the Common Market.

At a metropolitan level, governments have responded to these developments by expanding and improving high-quality public transport (i.e., train, tram and metro). As will be shown in the following section, this policy has primarily been pursued to limit the negative effects of traffic growth. In the third section, we will argue that high-quality public transport systems can also play an important role in strengthening the international competitive position of an urban region. Despite increased attention to public transport, public investments in this field have not grown sufficiently, mainly because of financial reasons. The last section therefore discusses new financing modes, in particular the franchise-concept, as a financial instrument which can generate additional infrastructure investments without deteriorating the public finances from the state.

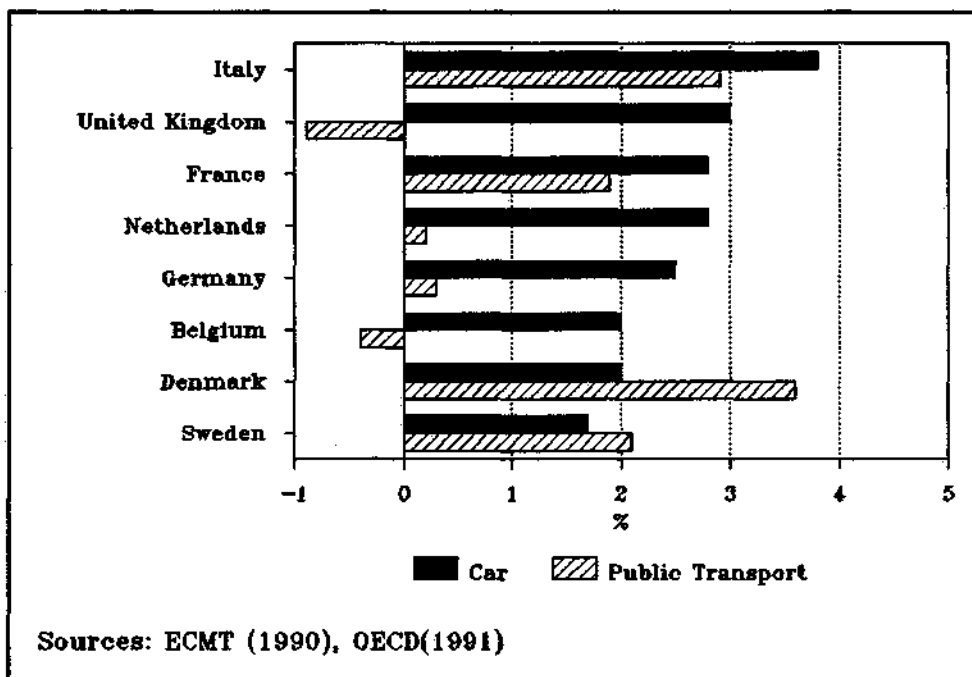
2. Growing Mobility

2.1 Some figures

In the period 1975-1988, passenger transport demand has risen substantially in all European countries where the urban most important regions of socio-economic interest are located. This has especially been the case for passenger car traffic; public transport has grown less and has even declined in a few countries (Figure 1). As a direct result, the market share of public transport - the modal split - has declined as well (with Sweden and Denmark as notable exceptions; see Figure 2). It seems plausible that this trend has even more strongly

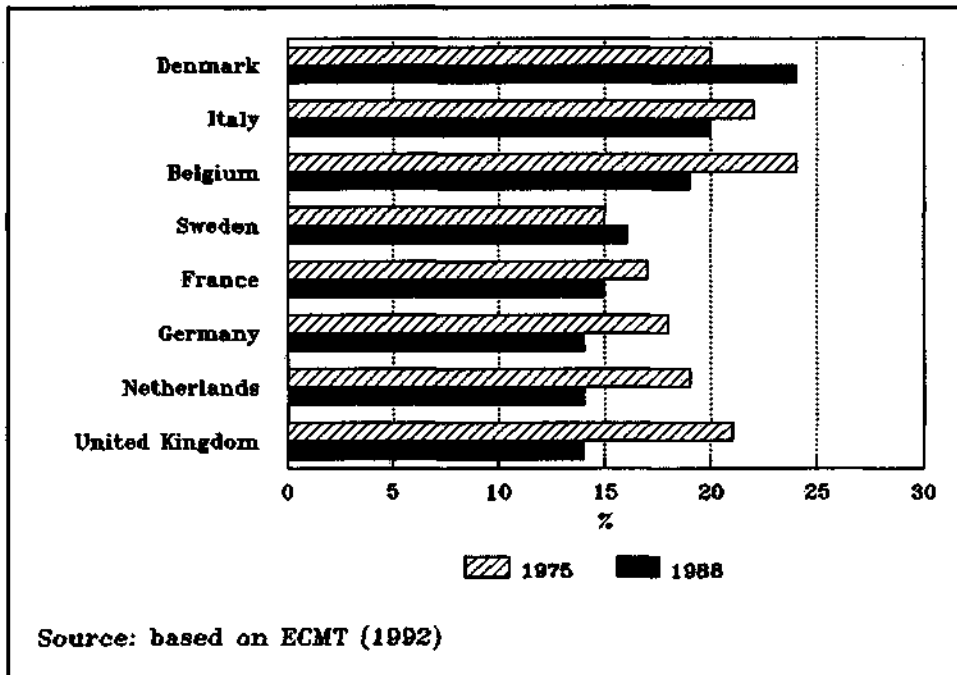
taken place at a metropolitan level, although internationally comparable data with respect to passenger transport demand are not available to corroborate this assumption. But income growth and family dilution - two major determinants of car ownership - have taken place faster in cities than in rural areas [see Bruinsma and Rietveld, 1991].

Figure 1: Average yearly growth of passenger kilometres (1975-1988)



The growing mobility has led to a large number of negative external effects (air and noise pollution, horizon pollution traffic unsafety and landscape decay), with significant costs to society at large. Apart from these external costs, real investments in transport infrastructure have declined in most countries investigated. Sweden and Italy are exceptions; after a slight drawback, their investment levels have risen impressively [ECMT, 1992]. Because infrastructure supply has not kept pace with demand, the transport network in all countries and metropolitan areas has begun to experience severe bottlenecks, such as traffic congestion, parking problems and delays in public transport.

Figure 2: Public transport share in modal split (1975 and 1988)

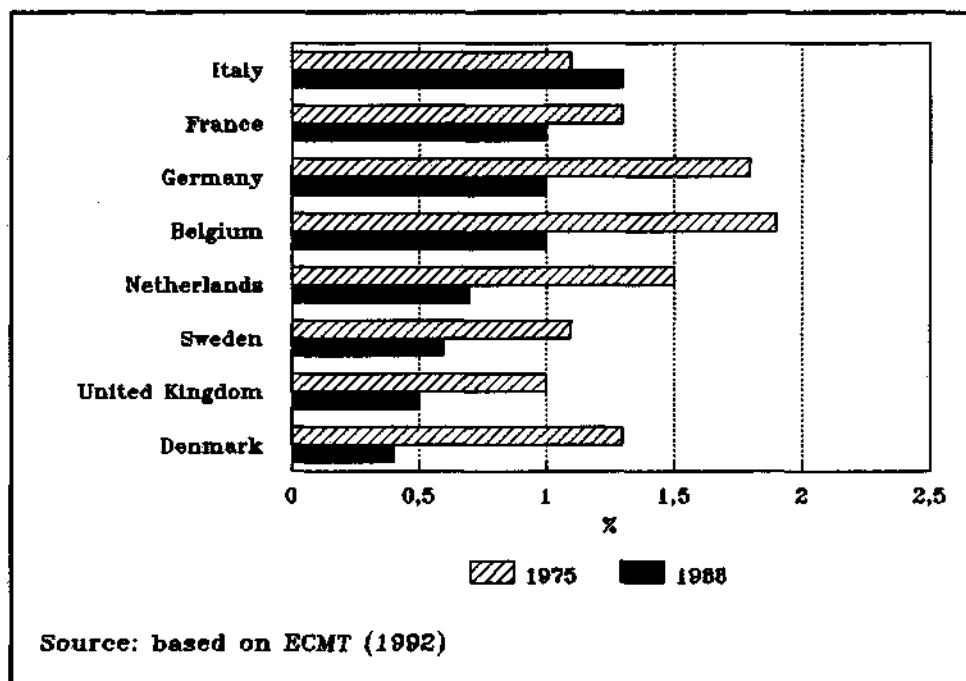


For industrialized countries, the OECD [1989] estimates the societal costs of transport - congestion included - at 3% to 4% of gross national product, a share which is much higher than the total amount currently invested in infrastructure(!).

Because of demographic and income trends, it is unlikely - given current transport policies - that passenger transport growth will weaken in the decades to come. At a European level, experts estimate a growth of 50% to 70% over the next twenty years [Salomon et al., 1992, and Group Transport 2000 Plus, 1990]. Passenger traffic growth in metropolitan areas will probably exceed the national average.

To balance supply and demand of transport infrastructure, three structural solutions can be imagined : (1) a reduction of the growth of transport demand, (2) a more efficient utilization of the capacity of current transport infrastructure (for instance, by means of electronic road pricing), and (3) an expansion of the capacity of transport infrastructure.

Figure 3: Investments in infrastructure as a percentage of GNP (1975 and 1988)



2.2 Policy options

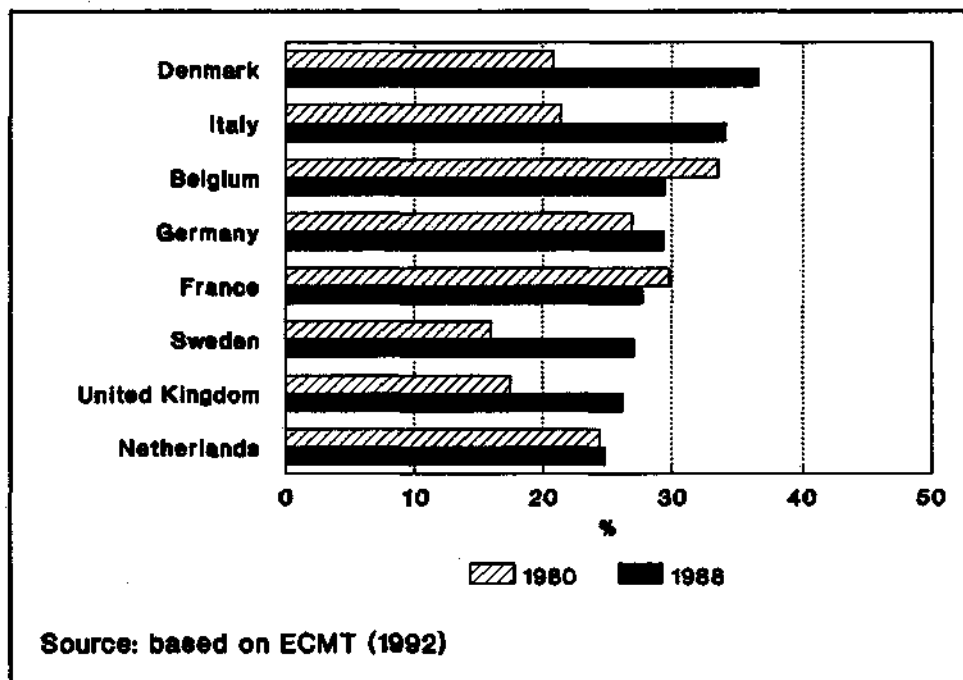
In the 1980s, the attention has mainly been focused on policies which aimed to limit the negative external effects of transport, without limiting transport growth itself. The introduction of unleaded petrol and the obligation to equip passenger cars with a catalytic converter serve as major examples. Although governments have increasingly paid attention to the social costs of the transport sector, they do not seem to be willing to drastically limit the growth of this sector. In some countries though, attempts are being made to slow down the growth of passenger car traffic, mainly by means of fiscal or marketbased policies. Since the share of this transport mode in the modal split is usually very high, this does not prevent a further decline of the share of public transport.

The second solution, electronic road pricing, aims at a better distribution of demand in time and space and can in some cases reduce traffic congestion [see, for example, Lundqvist and Mattsson, 1992]. Yet, it is unclear to what extent this solution is a structural one. In metropolitan areas, the utilization rate of infrastructure capacity is already very high, which makes it hard to believe that electronic road pricing by itself can absorb a 50% increase in transport demand (see Emmerink et al., 1993).

Since the development of electronic road pricing is still in its infancy and since the growth of transport demand is not seriously called into question, transport authorities have focused their attention primarily on capacity expansion. During the past decades, the construction of transport infrastructure has been mainly demand-induced. This means that investments were principally channeled to road infrastructure and to a much lesser extent to public transport [ECMT, 1992]. In the course of the 1980s it has, however, become evident that this policy can no longer be sustained. Especially in metropolitan areas, a further expansion of the road network is no longer a viable option, sometimes because there is simply not enough space, but chiefly because the quality of life is unacceptably affected. Research shows indeed that actions to increase the modal split of public transport are much more effective to limit the social costs of transport than policies to reduce the negative external effects of car traffic. Per passenger kilometre, passenger car traffic causes over five times as many traffic accidents and generates two to fifty times as much air pollution; besides, road traffic is also the main source of noise pollution [see Nijkamp en Oosterman, 1992b].

Compelled by necessity, many governments have abandoned demand-induced transport policies in favour of policies which emphasize the supply of high-quality public transport systems as a conditional strategy for competitive behaviour. The period 1980-1988 shows for most countries a clear shift from investments in road infrastructure towards investments in rail infrastructure (see Figure 4; data for urban transport are not available).

Figure 4: Investments in rail infrastructure as a percentage of investments in transport infrastructure²



2.3 Public transport at a metropolitan level

The continuous growth of transport demand forces also governments at a metropolitan level to expand transport infrastructure. Since a further increase of road traffic is neither feasible nor desirable, the cities investigated in our studies are heavily investing in high-quality public transport systems or are planning to do so. At the end of the 1980s, Paris, Milan, London, Stockholm and Munich have sharply increased investment budgets for public transport. Copenhagen, Brussels/Antwerpen and Randstad Holland are lagging behind in this respect.

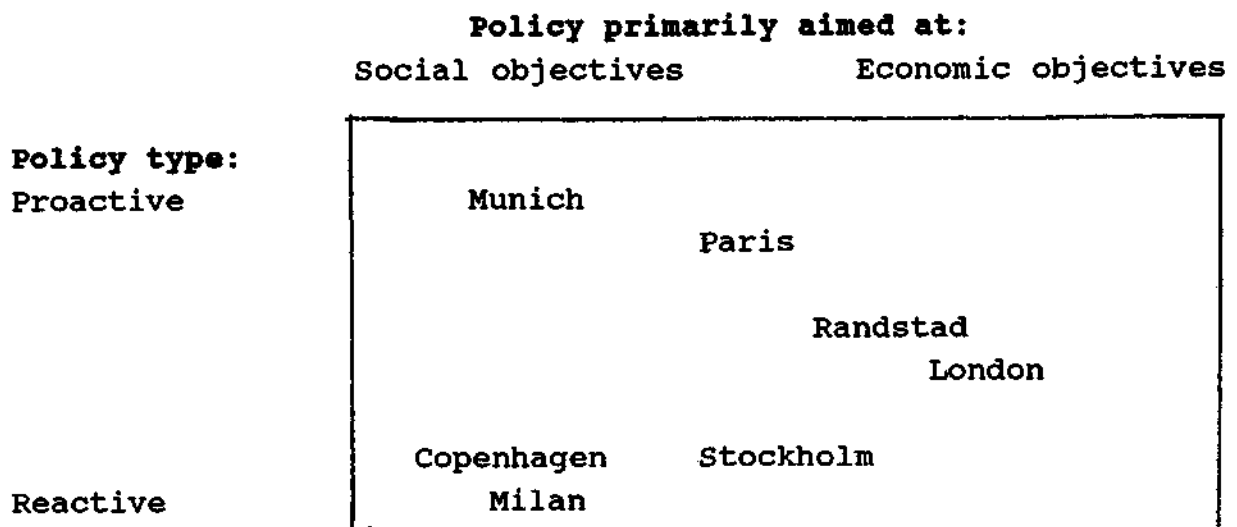
From Nijkamp and Oosterman [1992a] and Bruinsma and Rietveld [1991] it is evident that in the countries of

² Total investments in road and rail infrastructure

interest transport policies are first and foremost designed to reduce the negative external effects of car traffic. Social motives play an important, if not dominant part. These motives include: reduction of traffic congestion, traffic accidents, air pollution and/or noise pollution. In none of the cities under investigation, transport policies are dominated by the economic objective of developing explicit strategies to strengthen its international competitive position. It is noteworthy however, that in the case of the Randstad Holland and London economic objectives are more balanced vis-à-vis the above mentioned social objectives.

In some cities transport policies are developed as a response to existing bottlenecks in the transport system (reactive), while other cities have adapted their policies to anticipated developments before bottlenecks are becoming manifest (proactive). Figure 5 typifies transport policy in seven cities (Brussels/Antwerpen is not included, since it has not yet decided about its new policy). The grouping of social and economic objectives is somewhat arbitrary. As will be outlined in the next section, transport policy in Stockholm and Ile de France (Paris) also have a distinct economic dimension.

Figure 5: Typology of public transport policy in seven European metropolitan areas



In Milan (see insert 1), and to a lesser extent in Stockholm and Copenhagen, the actual consequences of high mobility growth have necessitated policy makers to focus their attention on public transport. In Stockholm, these consequences are less difficult to push back than in Milan, since city planners have traditionally taken into account access to public transport as an essential objective (see also insert 2). Copenhagen is the only city where congestion on the railway system (S-bahn) seems more severe than on the road network. Plans have been made here to upgrade the quality of public transport and to build a metro.

Milan (insert 1)

In the 1980s, traffic congestion has grown heavily in and around Milan, causing the highest level of air pollution in Europe. The municipal authorities have implemented a set of transport policies aimed at an increase in the share of public transport in the modal split. The municipality aims to raise its current share of 50% to 60% in 2000. For this period, mobility growth is estimated at 15%. To absorb this growth and to reach a 60% share at the same time, the number of passengers transported has to increase with 38% till 2000; by then, car passenger kilometres will have declined with 10%. To realize this ambitious goal, passenger car transport is discouraged and the public transport system is upgraded (investments in public transport will be raised from \$1.5 bln in 1981-1989 to nearly \$5 bln in the period 1990-2000). A major part of the historical centre is converted to a pedestrian area, while illegal parking is heavily fined. Public transport is upgraded by an expansion of the metro system, the construction of extensive 'park-and-ride' facilities and the introduction of 'integrated ticketing'.

Munich and Paris have a tradition of very long term transport planning term (some 25 years). The 1965 transport plan of the city of Munich foresaw an increase in the share of public transport in the modal split from 50% in 1965 to 65% in 1990. Although this objective has not been achieved, a strong expansion of the metro system and the regional railway network was already undertaken in the 1970s. Mobility growth has also timely been taken into consideration in Paris. In London and the Randstad Holland, the construction of public transport systems is mainly dictated by the fear of the negative economic repercussions of traffic congestion.

To attract passengers to public transport, the authorities in charge are attempting to positively influence the relationship between price and quality. In principle, four kinds of policy measures can be envisaged: (1) measures to increase the quality of public transport, (2) measures to decrease the quality of private passenger car transport, (3) a reduction of the price of public transport, and (4) a rise in of the price of passenger car transport.

All cities evidently strive for a better quality of public transport. Actions are undertaken to increase speed (higher frequencies, more correspondences, integrated ticketing) and access (more lines, park-and-ride facilities). Research into bus transport in a number of French and English cities shows that improving the supply of public transport services can strongly increase the number of users [Appleby, 1985 and Massot, 1991].

Some cities combine the above mentioned actions with a compulsory reduction of passenger car traffic (Milan, Munich and Stockholm). Examples of such measures are: parking restrictions and the conversion of roads to pedestrian areas. Needless to say, the quality of car traffic also declines because of increasing congestion.

Although all cities implement measures to increase the quality of public transport relative to the car, this cannot be said of price policies. Only Stockholm and Paris have deliberately advanced the price of car traffic. Stockholm has planned a 'road charge scheme' (see insert 2), while Paris has resorted to fiscal measures. Most city governments are, after all, not in the position to influence the price of passenger

car transport. These decisions are mainly made at a national level (gasoline price, car related taxes, etc.).

In addition, in none of the investigated metropolitan areas the price of public transport has been reduced. In fact, in many cases tariffs have risen to such an extent that passenger car traffic has become relatively cheaper. This inconsistency between quality policies and price policies (Table 1) is not too difficult to explain. Since government subsidies to city transport corporations are insufficient to cover improvements of the public transport system, they are more or less forced to increase tariffs. Despite these price advances, all cities experience an increasing number of public transport users. Apart from better quality, increased congestion and parking problems may be held accountable.

Table 1: Policy measures at a metropolitan level

	(1)	(2)	(3)	(4)
Brussels/Antwerp	Yes	?	?	?
Copenhagen	Yes	?	?	?
London	Yes	No	No	No
Milan	Yes	Yes	No	No
Munich	Yes	Yes	No	No
Paris	Yes	No	No	Yes
Randstad Holland	Yes	No	No	No
Stockholm	Yes	Yes	?	Yes

2.4 Preliminary conclusions

Continuous mobility growth has led to ever higher levels of congestion, air and noise pollution and landscape decay. City governments have responded by upgrading public transport. In many cases, though, measures have been taken either too late or have not been efficacious. Moreover, transport policies have not always been consistent. These shortcomings can be traced back to (1) a lack of financial means, and (2) a

lack of integration between national and city transport policies.

Another conclusion is that in Figure 5 ('Typology of public transport policy in seven European metropolitan areas'), none of the investigated cities is placed in the upper-right corner. In other words: none of the cities considers public transport mainly as a means to enhance its international competitive position. This finding is, in a sense, incompatible with the observation of urbanologists such as Castells [1989] and Hall [1990], who suggest that urban areas will face an ever increasing competitive battle for employment. Before identifying the potential impact of an active transport policy on a region's competitive position, we will first sketch the origins of this competitive battle.

3. Economic Restructuring

3.1 Technological shifts

The development towards a network economy has been induced by various technological advances. The most important technological innovation of the last thirty years, the development of information technology, has led to a fundamental shift in the way companies design, produce and distribute products. The application of information technology enables them to produce at lower costs and to serve client needs more effectively. Companies can operate more cost-conscious and more market-conscious because of a better coordination of the various chains of the production system, although new applications are also used within the chains themselves (e.g. CAD/CAM in design, Flexible Manufacturing Systems in production, and route planning systems in distribution). An important effect of better coordination is a sharp reduction in throughput-time, the period which elapses between the placing and the delivery of an order. A short throughput-time enables a firm to respond swiftly to changing client needs ('economies of scope').

In addition to the coordination of different activities within a single company, information technology can also be applied to coordinate the activities of several companies in a

network configuration. New forms of (international) cooperation are at present originating, leading to further cost reductions or service improvements. As a result, companies are better able to farm out parts of their production processes to specialized suppliers, in order to concentrate their resources on their core business. This often means that labour-intensive activities are shifted to low wage countries. Information technology also enables companies to undertake core business activities in cooperation with other firms, so as to gain from economies of scale (especially in the field of research and development). These developments have a profound impact on the structure of the productive system. It gives rise to network relations, which are dominated by a few large multinational corporation and surrounded by a large number of advanced service industries.

It is evident that firms which adapt insufficiently to these developments will lose their competitiveness. The necessity to restructure along the above sketched lines is reinforced by the increasing intensity of international competition. The creation of the Common Market in Europe, for instance, means that companies do no longer enjoy privileges in their home market; trade barriers are also more and more eliminated at a global level (GATT-rounds).

3.2 Economic restructuring at a metropolitan level

The rise of a new productive system has far-reaching consequences for the locational behaviour of firms, and therefore for the relative competitive position of metropolitan areas. Increased opportunities for coordination has made companies more complex, which has led to an increased necessity for control of activities. Headquarters and R&D departments are therefore increasingly located in information-rich urban 'milieus', i.e. in the neighbourhood of specialized business services, higher educational institutions, airports, advanced telecommunication facilities, etc, so as to benefit from a network society.

The production of knowledge and information, as well as logistic activities, will more and more determine urban economic development. Thus, for urban areas, it is of utmost

importance to obtain a central position in an international network of metropolitan areas. This network exchanges information and knowledge, in connection with streams of capital, goods and persons. Consequently, it may be expected that the availability of high-quality infrastructure, including public transport, will increasingly determine the firms' locational preferences.

Recently, much research has been devoted to locational determinants of (multinational) firms [Bruinsma and Rietveld, 1992b]. A recent and representative investigation has been undertaken by Healey & Baker [1992]; more than five hundred internationally operating companies were asked to indicate their essential factors for locating their business (Table 2). The results are in line with our expectations. Infrastructural factors - especially access to markets, customers or clients and transport links with other cities and internationally - even play a more important part than cost considerations. And, although of lesser importance, the quality of life is also perceived as an essential locational factor.

Table 2: Percentage of firms which consider the locational factor concerned as absolutely essential for locating their business

Factor	%
Easy access to markets, clients or customers	62
Transport links with other cities and international centres	49
Quality of telecommunications	43
Cost and availability of staff	39
Business climate and availability of financial incentives	34
Value for money of office space	23
Availability of office space	22
Easy of travelling around within the city	22
Languages spoken	17
High quality of environment	11
Quality of life for employees	10

Source: Healey & Baker (1992)

3.3 Metropolitan public transport policy revisited

The above observations place transport policies, which have until now been implemented in most cities, in a different perspective. So far, mainly traditional arguments (such as the reduction of congestion and air pollution) have played a part in building high-quality public transport systems. Considerations of international competitiveness are only incorporated in the policies of London and Ile de France (Paris) and are sometimes mentioned in connection with the construction of high-speed rail links through the Randstad Holland and in Stockholm.

The process of economic restructuring requires a reconsideration of public transport policy in urban regions: the importance of a strong international competitive position must explicitly be translated into the formulation of such strategic policies. Various private and public interest groups, e.g. in the Netherlands and the United Kingdom, have recently already made a plea for this approach. An increased attention for considerations of competitiveness points at the need for (1) an intensification of current policies, and (2) additional and flanking policies.

Current policies are often designed to reduce the impact of negative external effects of transport. Reducing congestion, however, also enables firms to serve their client groups more effectively and to make better use of a city's knowledge infrastructure (the Mälarbanan, a planned rail system around Stockholm, is a good example; see insert 2). Companies also consider favourable living conditions as an important factor for locating their business; it makes it easier to attract highly qualified personnel. The major impact of a high quality of life on economic development is aptly demonstrated by the impressive economic performance of the coastal region which stretches from Barcelona to Genova, the so called 'European Sun Belt'. Without the knowledge infrastructure of metropolitan areas, this region has succeeded in attracting numerous knowledge-intensive companies [Reclus & DATAR, 1989]. High-quality public transport may in this context reduce congestion and make a city (more) liveable, thus meeting the demands of international firms.

Next to an intensification of current policies, is it

desirable that cities are aware of their position in an international network of metropolitan areas. They should not only attune their transport policies to the region's own demands, but also to the demands of firms operating in a new productive system. Cities can only occupy a strong position in such a network if they are adequately connected to other metropolitan areas. Public transport can contribute to this by ameliorating access to other infrastructure (airports, teleports, etc.). An investigation by Group Transport 2000 Plus [1991] shows that the average speed of international road transport - taking into account congestion, border controls, loading and discharging - is less than twenty kilometres per hour, while more capacity and higher speeds are vital. Therefore, further actions are to be undertaken to interconnect urban areas, among other things by means of high speed railways.

This all does not mean that the role of the car will diminish. On the contrary, it is expected that the growth of goods traffic and commercial passenger car traffic will exceed that of national average. But a stimulus of public transport will be an important part of overall transport policy, and at the same time be considered as supporting the international competitive position of an urban region.

Since the creation of the Common Market, governments are limited in the use of traditional policies (such as exchange rate policy and monetary policy) to improve national competitiveness. Naturally, they are increasingly turning to structural policies, such as improving the educational system and building infrastructure. The construction of a high-quality transport system, of which public transport is an important part, is therefore not only a sensible policy option, it is also one of few remaining ones. Before formulating some concluding remarks, we will focus on eliminating financial bottlenecks, in particular how the private sector can be involved in financing urban infrastructure.

Stockholm (insert 2)

During the last decades, population and employment have declined in central Stockholm in favour of its suburbs. Population and employment growth in Stockholm's hinterland have, however, lagged behind the national average. The metropolitan economy finds itself in a phase of restructuring. Despite a decline of population and employment in absolute terms, traffic congestion in the city centre increases. To limit the growth of car traffic in central Stockholm and to revitalize surrounding areas, Swedish authorities have announced a number of major infrastructural projects.

One of these projects is Mälarbanan, a circular railway system which connects the major centres of Central-Sweden. This project is not only meant to reduce car traffic (which is planned to decrease by 3.5% in the period 1991-2005), but must primarily be seen as a means to integrate the metropolitan area of Stockholm with its surrounding areas.

In addition, a project will be started which combines investments in public transport (\$2,5 bln) with investments in ringroads (\$4 bln) and a road charge scheme. This scheme will consist of a toll ring around the inner city and is used to discourage car traffic of the city centre as well as to finance the ringroad system. A scenario analysis of this project has led to the important conclusion that investing heavily in public transport does not lead to a larger share in the modal split if the (competing) road network is expanded and upgraded at the same time [Anderstig and Mattsson, 1992].

4. New Financial Instruments

4.1 Introduction

Advanced urban infrastructure is a formidable weapon in the international competitive battle between cities, but it is at the same time costly. With a few minor exceptions, most public transport corporations in almost all European countries were traditionally government owned. A characteristic of public transport companies is that they are typically unable to cover their operational costs. During the past decades, governments have continuously supplied operational deficits by means of subsidies. As a rule, (central) governments also contribute considerable sums to the financing of infrastructure.

Since the 1970s, operational subsidies have risen sharply in most Western European countries. To limit the growth of operational costs, several rounds of cost-cutting measures have followed suit, often combined with tariff advances. These measures have stabilized or even reduced the subsidy ratio (the quotient of operational subsidies and operational costs) of most transport corporations in the course of the 1980s. However, this does not alter the fact that city transport is still operating at a loss [OECD, 1988]. Subsidies range from 8% (Network Southeast, London) to 60% (Paris) of operational costs.

Partly because of tariff rises, many countries have witnessed an increase in the price of urban transport relative to passenger car transport [Orfeuill and Zumkeller, 1991]. Nevertheless, the number of transported travellers is still growing, though not as much as total passenger transport growth. Without supporting policies to reduce car traffic, opportunities to further increase tariffs seem to be limited.

In a number of cities, public transport policy is therefore at a deadlock. On the one hand, it must cope with strong social and economic forces to invest heavily in new transport infrastructure. On the other hand, public transport corporations face ever increasing budget restrictions and are unable to raise revenues and/or cut costs within the present structure. It is therefore sensible to look at new forms of financing which enable the undertaking of desirable investment

projects without putting an extra drain on public monies. Especially in the United States and Japan, off-budget financing of public transport projects has soared [OECD, 1991]. This section will discuss a form of financing which has up to now attracted little attention of policy makers, but has the potential to make an important contribution to the construction of transport infrastructure.

4.2 Franchising

Applied to public transport, a franchise can be defined as a contract between a transport authority (the franchisor) and a private company (the franchisee), by which the latter obtains the right to operate a public transport system. Under a conventional franchise contract, the franchisee compensates the franchisor in return to the vested rights. In the rare cases of public transport franchising, this situation has been reversed: the transport authority has compensated the private company for an expected operational deficit.

A franchise agreement can be applicable to both an existing public transport system and to a system that yet has to be built. In the former case, management responsibility is transferred to the private firm. In the latter case, the responsibility to finance the system is transferred as well. To prevent monopolistic behaviour, a franchise contract often states conditions which must be observed by the franchisee. Price setting is usually restricted; since this condition raises operating risk, transport authorities typically guarantee a minimum sum of revenues. A common type of franchising is Build-Operate-Transfer (BOT). A private company obtains the right to build and operate a system, in order to transfer it to the public sector after a contractually agreed period.

Franchising has three advantages to transport authorities. First and foremost, a private firm is likely to improve operational efficiency of existing public transport systems. If the franchise concerns a system which is yet to be built, an additional advantage is that the franchisee finances the system and bears the financial risk. This enables the transport authority to expand public transport faster, cheaper

and at a lower risk. A third advantage of franchising is that the private sector itself chooses the project to be undertaken. This is consistent with the idea that private firms can better identify attractive investment projects than the public sector.

An often heard argument against franchising is that governments can finance more cheaply than the private sector. The rapid growth of franchising in other fields suggests however, that the aforementioned advantages can compensate for higher financing costs [Kneppers-Heynert, 1988].

Franchising is not only advantageous to transport authorities, but potentially to private firms as well. In Northern America, Australia and Japan, franchising has in due time grown into a common phenomenon. In Europe, however, private firms are hardly interested in operating and/or financing high-quality public transport systems (the Chunnel excepted). The risk of investing in public transport is not perceived to be commensurate with the expected return on investment. Given the fact that virtually all public transport corporations are operating at a loss, it is understandable that expectations are not overly high. Nevertheless, the TGV-track from Paris to Lyon has yielded an acceptable rate of return on investment (15%), while a similar return is expected for the track Paris-Lille [ECMT, 1990]. Thus, franchising rail infrastructure should not be rejected in advance.

Infrastructural projects have certain characteristics which make them unattractive to private investors: (1) the lifetime of a project is very long, (2) initial investments are very high, (3) the building period is relatively long; during this period huge interest payments must be made while no revenues are collected, and (4) once started, a project is practically irreversible. To summarize, expenses are very high, primarily made at the beginning of the project's lifetime and can be estimated accurately. Revenues are spread over the entire lifetime and are difficult to assess. It is obvious that the risk associated with such a project is high. In order to interest private firms in public transport, dedicated actions must be undertaken to increase the rate of return and/or to lower the risk. Within the framework of a franchise contract, various options can be thought of, such as:

- clear area planning (including infrastructural projects), to enable a potential franchisee to estimate future traffic demand with reasonable accuracy;
- licensing a franchisee to develop real estate in the vicinity of the transport system;
- a yearly fixed financial compensation paid by the franchisor; to prevent free-rider behaviour of the franchisee, the transport authority must grant the franchise to the company which accepts the lowest amount of compensation;
- a clear compensation scheme for the private company in case the former actions are not exactly undertaken as agreed.

It is plausible that a franchise agreement between the public and the private sector, in which risks and returns are shared in a way which is acceptable to both parties, will lead to efficiency gains with respect to existing public transport systems and to a more rapid expansion of such systems than is possible under the present state of public finances. A well-designed franchise policy may thus act as a powerful weapon in the competitive battle between European metropolitan areas.

5. Conclusion

Given present transport policies in Europe, mobility will most likely continue to grow in the next decades. At the moment, the growth of transport demand is not seriously called into question, although transport authorities have attempted to limit its negative external effects. At a national level, and especially at a metropolitan level, increasing importance is attached to the expansion and upgrading of public transport. In many cases however, actions have been undertaken either too late or have not been efficacious. Apart from that, transport policies have not always been consistent. These shortcomings can be traced back to a lack of financial means, and a lack of integration between national and city transport policies.

Apart from reducing the undesirable side-effects of (especially) car traffic, there is a second, at least equally

important reason to propagate the development of high-quality public transport. Metropolitan areas are more and more entangled in a competitive battle to generate and attract knowledge-intensive industries in an international network society. Many of them appear to develop into powerful nodes in an international information network. To maintain their position in this network, a top class transport and communication system is vital.

It is therefore desirable that cities intensify current transport and communication policies, with due consideration for the demands of internationally operating companies. Urban public transport policy must not primarily be oriented regionally, but internationally. Partnerships with the private sector offers various opportunities to build the necessary infrastructure at a desired pace.

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