

# 13 Urban Governance and Infrastructure: Coping with Diversity, Complexity and Uncertainty

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## Growing Diversity, Complexity and Uncertainty

As a consequence of economic, technological and socio-cultural megatrends, the economic and social structure of urban society has changed and is still in motion. The internationalisation and informalisation of economies has changed the competitiveness of urban economies and powered the replacement of industrial economic functions by the service sector. The 'old' locations of economic functions in the city are often abandoned for new places of business in the suburbs. Also, lifestyles have evolved over the past decades, becoming less and less uniform. With the help of the private car, people's action spaces have expanded, becoming more differentiated among individuals. These changes are accompanied by serious economic, social and ecological problems which threaten the competitiveness and sustainability of cities.

The urban transformation is characterised by a growth in scale and complexity of the economic, social and political networks in which actors take part. The transformation is accompanied by a diversification in the mobility patterns of persons, goods and information. The diversity, complexity and dynamics of the network society lead to uncertainty among those who have to manage and control the urban transformation processes. Their task is to improve

urban performance in economic, social and ecological respects. Their uncertainty is fed by a lack of knowledge about the interrelations between economic, technological and socio-cultural megatrends, about the behaviour of different actors, and about ways to analyse and influence these linkages.

In this book, we focus on *urban infrastructures* (such as communication and transport, culture and recreation, and environmental infrastructures). Especially in the transport and communication sector, infrastructural developments lead to spatial distribution patterns, economic structures and social behaviours which require new forms of urban governance. The main objective of this book is to develop concepts, methods and strategies for investments in urban infrastructures in order to govern increasing diversity, complexity and uncertainty, features which characterise the urban transformation processes. It is shown that different sets of tools affect the capacity to manage urban transformations. Moreover, these processes are shown to be interrelated. Research work by COST-CIVITAS members has been based on a dual approach to urban infrastructures and development: a *functional* and a *governance/management perspective*. As a result this volume is a rich collection of theoretical contributions and case studies (see chapter 1, section 'Outline of the Book').

These contributions offer some support to decision-makers. Knowledge and information should reach actors – whether engaged in daily life or in the planning practice – in order to improve urban governance, co-operation and decisions on joint urban planning. From a functional perspective, planning models may indicate where *planning strategies and transport systems are insufficient*. However, concrete conclusions have to be made by people who are able to translate scientific results into political demands. From a governance/management perspective, network analysis is able to improve the information that underpins existing arrangements among actors and can recommend improvements. Nonetheless, efficient management and network building is highly dependent on the willingness of administrations, landowners, businesses, politicians, and societal groupings to take part in such a process, to exchange information, and to accept uncertainties.

In this concluding chapter, we discuss how these two perspectives on urban infrastructures and urban performance could

be linked to each other. For this purpose, the next section proposes a framework for an integrated approach. Section 'Learning from theoretical and practical experiences' combines the most important issues raised in the contributions to this book. In the concluding section, we formulate some suggestions for research in the near future.

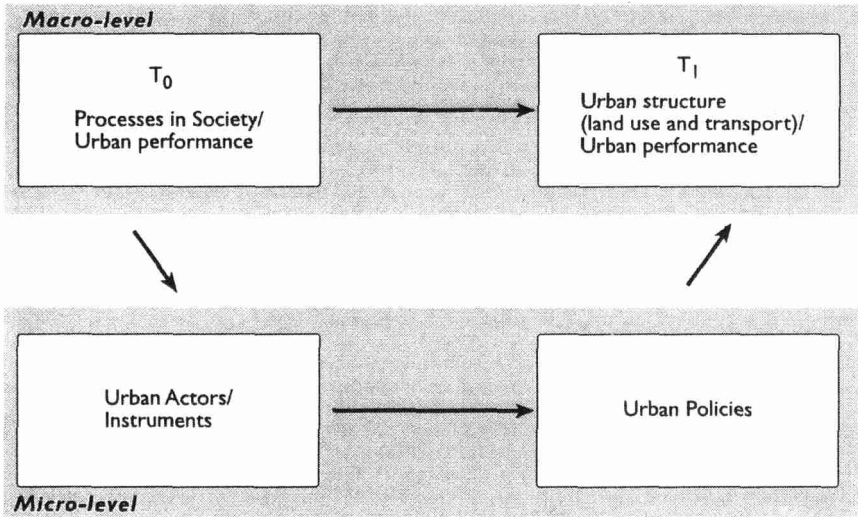
### Framework for Effective and Efficient Urban Governance

The main aim of urban policies is to *influence urban performance*. Local authorities cannot *directly* influence the behaviour of urban actors in order to improve performance. They can only influence this behaviour in an *indirect* way by changing the *conditions* in which behavioural decisions are taken by the actors. The effectiveness of the policies to change these conditions is dependent on an understanding of the relations between processes in society at large, the conditions for the behaviour of urban actors, and the development of the urban structure in the course of time.

#### *Conditions from the Functional Perspective*

A prerequisite for effective and efficient urban policies is to have a good understanding at the micro level of the behaviour of different actors in daily life within the urban system (the functional perspective), while taking into account the processes in society at large at the macro level. Together with the existing urban structure and the urban performance at that time ( $T_0$ ), these processes will influence the set of conditions for the behavioural decisions on the micro level (Figure 13.1).

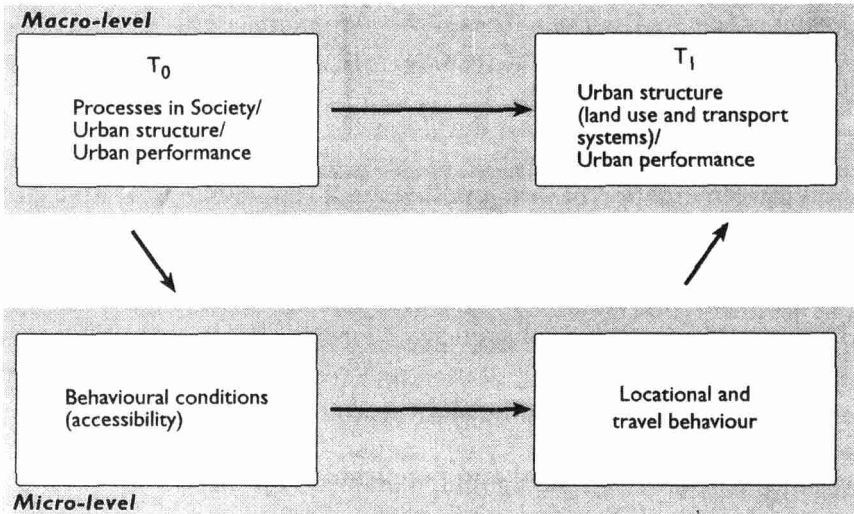
This set of conditions is also called 'accessibility'. These opportunities to travel will influence the locational decisions of households (where they live and where they work) as well as the locational decisions of companies and employees. Also, the daily travel decisions, like mode choice and travel routes, are influenced by this set of conditions. The aggregation of all these individual decisions has consequences of the performance of the city and the changes which are taking place with respect to the land use and supply of transport systems at time  $T_1$ .



**Figure 13.1** Relations between macro and micro level from a functional perspective

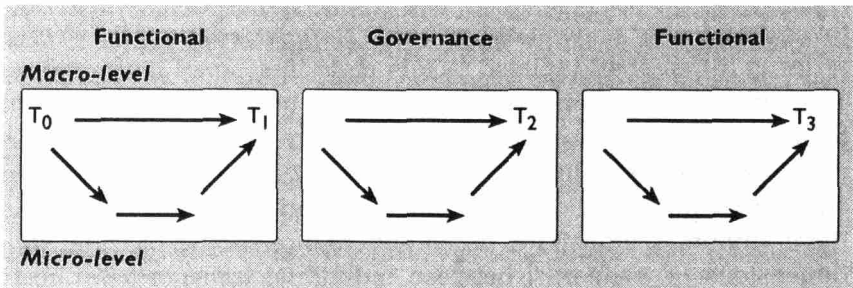
*Conditions from the governance/management perspective* To gain a better understanding of the type of governance/management best suited to influence the behaviour of different actors in daily life, we need to know how the behaviour of the urban actors in the planning process is linked to developments in the urban system (the governance/management perspective). The conditions for decision-making and implementation of these urban actors are influenced by the economic, social, cultural, spatial, political and administrative processes in society at large and the urban performance at a given point in time,  $T_0$  (Figure 13.2). These conditions refer to the type and number of actors involved in the planning process and the available instruments.

The participating actors and the available instruments will influence decision-making processes. These decisions will result in the formulation and implementation of urban policies and investment programmes. Subsequently, the use of urban structure and/or land uses and the supply of transport systems will be changed. That, in turn, will affect urban performance at time  $T_1$ .



**Figure 13.2** Relations between the macro and micro level from the governance/management perspective

*Interdependence of Both Perspectives* Both the functional and the governance/management perspectives are linked to and dependent upon each other. Figure 13.3 shows these interactions. The increasing diversity and complexity in daily life means that new actor groups are growing in importance and power, while others are



**Figure 13.3** Interactions between functional and governance processes

losing their influence. These developments will change the conditions in the planning process, which can have consequences for future policy decisions.

On the other hand, the development of actor networks in the planning process, the selection of instruments, and the formulation and implementation of urban policies will change the land uses and supply of transport systems as well as urban performance. These changes within the urban system will modify the behavioural conditions for households, companies and institutions in daily life. In time, this can have consequences for their locational and travel behaviour.

## **Learning from Theoretical and Practical Experiences**

### *Functional Approach*

It has been demonstrated, how the rapid increase of mobility has led to new patterns of consumption of space and time. Urban sprawl in terms of housing, shopping facilities and workplaces is one result; flexible working and shopping times and extended recreation are another. Within this context, *transport planning* has to consider more complex travel patterns. Furthermore, it has to deal with both the hardware (investment) side of infrastructure, as well as the software (operational handling, pricing) side.

The paper by *Dijst, Jayet and Thomas* represents a first step towards a deeper understanding of the complex relations between a series of different and related factors regarding urban performance. The authors make an important distinction between accessibility of the individual or household and accessibility of an activity place or urban area. Accessibility is considered a key issue in transportation and urban policies: both determine territorial transformation. As these authors demonstrate, urban governance should consider two dimensions of trade-offs: between individual transportation costs and people's travel needs; and between collective transportation costs and production costs of companies. The results of these trade-offs are reflected in the land values or bid rents. To sum up: the link between location decisions (by firms or households) and the economic, social and environmental performance of the city is

extremely important and should be guided by spatial configurations and transportation systems.

*Boffi* and *Nuvolati* take up a theme which is rather new within urban policies: the time factor as one of the main features managing the transformation of the city. They argue that planning approaches should be able to take the strong fragmentation of time into which is a consequence of the combination of labour, consumption and social activities by each individual. Their approach has potential for the future, since there is growing interest in lifestyles and time uses as a crucial variable for spatial planning and urban governance. In their case study of Milan, they underline how the mix of mobility patterns is related to different population groups using the city. Four innovations are conceptualised: the integrated policy design concerning public services and timing; the relevance of time in cabling the city; the time-bank improvement; and the impact of time flexibility on urban mobility. In fact, the use of time, considered a scarce resource, depends on the spatial organisation of activities. In the future, time policies should be developed not only by considering the number and type of actors, but also by delimiting metropolitan areas in order to design planning strategies related to different mobility profiles. In this context, the article of *Riganti* points out the impact the two Crossrail projects in Milan and Turin will have on the organisation of the region, due to the increase in the levels of accessibility and the possibility of a further urban expansion. Nevertheless, the shift from private to public transport is not directly expected as an effect of the density of existing networks and mobility opportunities. Here, individual and collective time patterns should not be underestimated. However, cities see new Crossrail systems as an opportunity to govern change in a more general framework.

*Kanaroglou* and *Scott's* paper offers some support for the application of transport models. As they point out, considerable empirical evidence is available to document the relationship between transportation and land-use policy. Yet more often than not, policy is formulated and practised independently from land-use considerations. Integrated urban models can be effective in offering insights into the effects of urban policies on urban performance. Since most actors are interested in real estate values, it is to be hoped that such models will get linked to their actors' interests.

*Verhetsel's* paper may be seen in this context. She describes the implementation of a traffic model to evaluate the impact of different policies on urban traffic, underlining the different impacts of planning, infrastructure, regulatory and financial measures. She does not expect too much from planning measures. They may, for instance, stimulate people to make use of public transport, but regulatory and financial interventions would still have stronger effects. Planners and geographers ought to conduct more research into the local spatial effects of other non-physical measures (such as network management and financial incentives). However, the Flemish model presented in the paper has the potential to be used in an argumentative discourse on sustainable urban development.

#### *Governance/Management Approach*

Research reveals some new forms of urban governance. Networking and negotiation between a variety of actors in urban development are now recognised as an important complement of or even as a substitute for regulatory measures by local or regional governments. Urban governance implies organisational capacities and interaction between public and private actors. Individual power is no longer defined by objective financial resources and hierarchies but by actors' positions within the network, their relationships to each other, and the functioning of the network itself. City governance, thus, is assumed to have adopted a new approach to decision-making and management. The general picture – at least in democratic political systems – is one of increasing differentiation of responsibilities for managing 'new' complex problems.

*Mennola* presents a useful framework to compare single case studies with a general understanding of relevant characteristics of European cities. He distinguishes four ideal types of city governance – the unitary city, the village city, the multi-level city, and the private city – along four dimensions of interaction: the socio-economic area, the political community, the public administration, and the legal framework. He initiates a dialogue on improving the general comparative framework. *Schenkel's* theoretical paper on policy networks can be understood as a specification of one of the four types of city governance. Network management is assumed to be close to the multi-level city. Emphasising the shift from the



bureaucratic to the network state, he demonstrates how urban policy can be improved if it is supported by communicative steering and network management. The main point is to focus on the actors rather than on the physical urban problems.

The two case studies by *Güller and Schenkel* and *Halvorsen* are good examples of the benefits of building up relevant actor networks. Compared to the traditional *ex ante* regulation of land use, case studies like these, focusing on the importance of network management, suggest that agreement-based regulations could lead to more successful planning and implementation. Although large infrastructure programmes are not going to disappear totally, it is shown that significant changes can be made in a city by gradually improving infrastructure without even having a clear idea of the ultimate goal. One target could be economic, social and environmental sustainability, but only if it is recognised as a normative, uncertain and process-oriented concept. Both case studies are good examples of new trends in urban planning, combining site potential, human resources, and management methods to move toward win-win situations.

Some of the obstacles should not be underestimated, however the Akerselva project was initially based on public ownership of space and public purchase of land, and the networks were built up mostly among public planners. Later, the project turned into a public-private partnership. From the beginning, the Zurich project was highly dependent on the quality of collaboration between the public administration and the private landowners; most land in Zurich is private property.

However, business prefers land markets with minimum constraints, regulations with maximum flexibility and certainty of outcome, and vigorous public funding of infrastructure. The network approach clearly supports the strategy towards public-private partnerships. The network approach clearly supports the strategy towards public-private partnerships both in terms of decision making on stepwise development, as well as financing on the base of iterated returns on investment.

The Geneva experience, as presented by *Stein*, analyses changes in the behaviour of certain groups among the population when they use public space. The example of public space demonstrates how top-down approaches need to be supported, sometimes even

replaced, by bottom-up attitudes about managing the urban environment. Public space is considered as one of the major factors for the re-composition of the urban environment. In contrast to the Zurich case (no inhabitants yet), the Geneva case was characterised by working-class housing and now has a high density of population. Therefore, Stein supposes that a successful project should be embraced by the various actors involved, in particular the inhabitants and users. *Lami*, on the other hand, stresses the importance of financial aspects and related feasibility evaluation techniques for transportation investments. Their application allows the necessary interaction between plan and market. The analysis of financial data makes it possible to specify subject matter, parties involved, costs and relative coverage. Despite the commonly shared view, the chance to use infrastructural policies to increase the value of urban areas has largely been overestimated. The most effective way to derive some multiplier effects from the advantages generated by public investments in transport has been linked to partnerships based on local building projects.

#### *Combined Approach*

As mentioned before a close link exists between the functional and the management approach. The increased world-wide mobility of goods and persons, labour and capital has contributed, in Western societies, to a fundamental transition – namely from an industrial to a service-oriented economy. This change involves decades of turbulence and uncertainty on labour and real estate markets. *Cities are on the move*. In light of the uncertainties and the new challenges regarding the distribution of advantages and disadvantages among the different strata of the population and economy there is a need to reconsider how cities (the crucibles of change) are governed. Markets and networks are not meant to replace or avoid clear regulation. Rather, they are supposed to integrate a wide range of interests and to increase the responsibility of each actor for the others.

It should be kept in mind that municipal governments deal not only with their internal problems. They are also faced with increased interurban and international competition. In part, the efficiency of urban governance is a decisive factor in this

competitive climate. But the level of infrastructural equipment is of relevance too. Municipal and regional governments are well aware that only cities with a substantial number of taxpayers are able to develop their infrastructures in a competitive way and to provide for the necessary social services. Keeping these taxpayers in the city, or bringing them back, has become one of the key tasks of urban development and urban governance.

What both perspectives have in common is that traditional practice has to be reviewed. Traditional planning and governing is no longer sufficient if it is reduced to plans, hierarchical structures, and an elite group of planners, administrators, and landowners. Models have to be tested with respect to their political practicability and feasibility in life. Urban governance should not be reduced to the enforcement of legislation. It increasingly involves the management of instruments and actor networks on a strategic level. On an operational level, urban governance calls for the participation of a wide variety of actors in the phases of planning and decision-making, financing, implementation and land use. To that end, urban governance can be improved along seven dimensions:

- renewal and development of urban identities;
- replacement of plans by strategies and discourse;
- building up confidence;
- building networks and coalitions;
- setting interim targets (as in a milestone policy, i.e. stepwise, but with clear deadlines);
- human resource management (i.e. promotional spirit, leadership, knowledge, and capacity-building networks);
- promotion of sustainability as a general guideline. These points should be considered in the 'traditional' infrastructure or land-use planning as well as in urban governance, understood as network management and network building.

### **Governing Cities on the Move: a Research Agenda**

It is our thesis that functional and governance perspectives should be more integrated with each other in order to govern diversity, complexity and uncertainty. This book contains some theoretical

and practical building blocks that we can use to build an integrative framework. But this volume is just the first step in that direction. Several questions have to be answered before we can take the next steps. Two questions can be formulated:

1. *In what way are the functional and governance perspectives on urban performance linked to each other in practice, and how could the integration of both perspectives be improved?*

We need more information on the way in which knowledge and information on the behaviour of actors in daily life can be produced and used in planning processes. Growing diversity, complexity and uncertainty make it necessary to change our concepts and analytical tools to increase this knowledge and thereby improve the effectiveness of urban governance. A systematic review of the types of concepts, methods and models which are used to 'measure' this behaviour is still lacking. We also need to know more about the influence of various factors on the use of knowledge and information.

2. *In what way could the moral dimension of actors in a policy network be improved?*

The increasing diversity, complexity and uncertainty can be governed by using regulations such as laws. This approach can increase the burden of the control and administrative functions in the city. We should ask ourselves the question if further regulation could be avoided in order to integrate the interests of all potential actors in the planning process. By increasing the responsibility of each actor for the interests of the other actors, this goal could be reached.

We think that more research is needed to integrate the functional and governance perspectives. At the same time, we should not forget that science is no longer able to resolve all the uncertainties and doubts that might arise. Both scientists and practitioners must learn to deal with complex problems in a longer time frame. There are hardly any immediate solutions, but if scientists start taking part in practical planning processes, they will be in a better position to suggest ways to manage these uncertainties. A concerted effort by

all actors in the policy network can contribute to the development of visions. This will give practitioners a basis on which to evaluate every step taken towards these goals.