Integration of Transport and Land-use Planning in Japan:
Relevant Findings from Europe

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Please allow me to begin with a personal glance back to the early nineteen-sixties, when I was doing post-graduate studies in traditional architecture and music in Japan. Motorisation in the land of the rising sun was then still at a very low level\(^{1}\). My guidebook said that “except in large cities and their suburbs, Japanese roads are not yet in a good state of repair”. People’s expectations were therefore high when the first Shinkansen Line opened. In urban design terms, it was already very impressive for me to find huge department stores placed right on top of city railway stations, taking advantage of the hordes of passers-by who rode the overcrowded trains. Cities still had many districts with typical two- and three-storey wooden buildings. No American car would have been able to negotiate the narrow streets, where on windy evenings watchmen would admonish the population not to light fires in their stoves.

Since then I have never been back to Japan, and in recent weeks it was therefore with especially keen interest that I read some literature on the history and outlook of Japanese urban planning and transport policy. My insights are very fragmentary, however, and I apologise if my interpretations are inaccurate or the result of a misunderstanding.

ECMT has proposed that I speak today about the “Integration of Transport and Land-use Planning in Japan: Relevant Findings from Europe”. For a number of years I was fortunate enough to chair the OECD/ECMT Joint Project Group on “Urban Travel and Sustainable Development”, and to participate in follow-up work. Let me thus report on pertinent insights. And please allow me to delve somewhat more deeply into policies - achievements and setbacks - in my own country, Switzerland. Here I am a bit puzzled by what “relevant findings for Japan” can mean. Nobody likes to carry coals to Newcastle, and it is a known fact that the Japanese post-war period has been characterised by an extraordinary variety of experience with spatial and transport policies, and by much innovation.

So what are the problems that now prompt us to look at the “Integration of Transport and Land-use Planning”?

Land-use and transport are related to each other through strong reciprocal interaction. In addition, both are essential to the economic and social well-being of society and the environment. From all sides, demands are made on land-use and transport policies, and they are often conflicting.

Excessive land use and excessive mobility, in the form of traffic, are considered problematic in almost all parts of the world today. With regard to reciprocal interaction, the following questions are of interest:

- To what extent does land-use planning have the potential to reduce travel; and conversely,
- To what extent does restraining the physical, regulatory or pricing conditions of travel have the potential to reduce urban sprawl?

These questions are obviously relevant in larger spatial dimensions as well, if I can just hint at the impacts of transport conditions on the interregional and international division of labour and integration.

In what follows, let me focus primarily on issues of urban development. Only at the end of my contribution would I like to reflect on countrywide interregional aspects. I shall also confine myself to a discussion of passenger traffic, although it would also be fascinating to look at the interaction between distribution logistics and spatial development.

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1. Japan: 3.4m motor vehicles in 1960, 73m in 1997. Share of cars in modal mix of greater Tokyo: 7% in 1968, 33% in 1998; in smaller urban areas such as Nagoya, respectively 31% and 50% (source MLIT).
1. Interaction of transport and spatial development in urban areas

1.1. The railway as the initial backbone of spatial development in post-war Japan

Allow me first a glimpse at Japan’s post-war development:

In the Tokyo metropolitan area, the population rose between 1955 and 1965 from 13 to 19 million, which is a growth rate of more than 40% within ten years. Later, the growth curve clearly flattened.

To demonstrate what such growth means in terms of spatial development I would like to cite the interesting case of urbanisation in Saitama prefecture, north-west of Tokyo.

In Saitama, the Tobu Isesaki line provided direct access from the great manufacturing centres of eastern Tokyo. Along this rail line there developed residential areas that housed large numbers of industrial workers who commuted by rail to jobs in the capital. Three other major corridors in Saitama involve private railways, and one involves Japanese Railway (JR). The difference in terms of urban development is that the JR company has long been prohibited from engaging in speculative real estate development, whereas such activity is a major raison d’être of the private lines. This is evidenced by the closer spacing of stations on the private lines, leading to over 40 new rail stations in Saitama. Land development subsidiaries of the rail companies in the area have repeatedly focused on land development schemes. The railways have reaped profits from the resulting huge increases in land values, and they have re-invested them in railway development.

The subsequently established Shinkansen lines have had important impacts on urban development in Saitama, too. First, the centre of gravity has shifted far northward towards Omiya, which as the first Shinkansen station north of Tokyo Station has become a major transfer point. Second, the Shinkansen lines have allowed the dispersal of Tokyo-dependent residential development over greater distances, and their use for daily commutes is growing. Thirdly, access to Tokyo was significantly increased in the early 1990s for residents along the route of the Shinkansen line with the New Shuttle – a commuter line built in the right of way under the Shinkansen tracks as part of negotiations to appease local opposition to the Shinkansen route.

In summary, the railways, as the key structuring feature in Saitama’s urbanisation, were well established before post-war suburbanisation began. Urban development in Saitama during most of the post-war period is thus an excellent example of a highly efficient pattern of urban development along major radial transport corridors that converge on the metropolitan centre in a “star” shape form of development.

As for the modal split, one of the major factors limiting greater use of private automobiles in Japanese metropolitan areas has been the poor quality of the road system as compared to roads in the metropolitan areas of other developed countries. The first limited-access road through Saitama was the Kan-etsu expressway in the west of the study area, which opened in the early 70s, followed by the Tohoku expressway in the east (1980). In the early 1990s, the Saitama portion of the Tokyo Outer Orbital Expressway was completed, linking these two radial expressways with a third – the Joban expressway to the north-east. Probably of greater importance than the expressways for road travel within suburban areas are, however, the so-called “city planning” roads.


Steady improvement in the road system and increasing car ownership cleared the way for greater use of automobiles, both for commuting to work and for other travel in suburban areas. The efficient rail-based star pattern of metropolitan growth was thus to be undermined as further suburban dispersal took place. Another factor contributing to this development was that land prices in the vicinity of railway stations increased sharply when motorisation was still low.

Let me compare this phenomenon of early post-war extension of settlements in Japan with developments in Europe. There is, in my view, an essential difference, even if we must admit that within Europe two entirely different paradigms have to be considered: that of Western Europe and that of the Central and Eastern European Countries.

1.2. Cars and highways as early factors of spatial development in Western Europe

In Western Europe, the early start of post-war motorisation, and of highway construction, undoubtedly explains why suburban settlements extended more quickly beyond the catchment areas of the railway system than in Japan.

In my home town of Zurich, for instance, it is clear that in the 1960s and 1970s – that is to say in a period of brisk demographic growth and sharply rising individual demand for housing space – the peripheral areas of the conurbation that were accessible only by car developed most rapidly. Especially hilly sites were especially popular, and it did not matter too much that such locations could not be served by rail. Both single- and multi-family housing became decentralised, and with that arose the notion of “green widows” – a term used to describe mothers who lived in beautiful, quiet areas but lacked access to sufficient services, opportunities for part-time work or social contacts.

It was only after a 1990 referendum that Zurich got an efficient S-Bahn (regional transit) system and related feeder buses. Yet that important step in improving accessibility by public transport – even to peripheral areas – led into a time of economic recession, reduced population growth and waning growth in individual housing demand. No longer were investors building large housing developments in the outlying areas, but concentrating on closing gaps within settlements and renovating the urban fabric that had developed in the earlier period of boom. As a result, the extension of the settlement area became much slower, while at the same time the increased concentration of the population triggered greater demand for public transport. But the S-Bahn did not so much cause this internal housing development as take advantage of it as a service provider. Public transport – even when providing excellent facilities – could not have as strong a decentralising effect as motorisation and highway construction had before.

This development in the Zurich area is typical of many Western European cities. Because of this early urban sprawl, the population density of our metropolitan areas is far less than that of greater Tokyo, for instance. Yet it is a well-known fact that the population density is still much greater than in, say, the USA or Australia.

Decentralisation of the population in Western Europe was soon followed by the establishment of shopping centres on the outskirts of cities. And a subsequent step in the development of sprawl saw a shift of the distribution functions of production industries, back offices of the growing tertiary sector and – at especially attractive locations in the vicinity of cities - also head-quarters of international firms and research centres.

I scarcely need to say what the consequences of this development were. The main evils arising from overgrown cities are seen as congested transport systems, particularly roads; rising land costs, which made

people look for cheaper locations farther away; longer commuting times; increased levels of pollution and thus health problems; and increased need for costly investment in new infrastructure. In contrast, we must admit that for several decades this development suited individual preferences.

1.3. Late conversion of the Central and Eastern European Countries to more car-based urban growth

The history of spatial development is very different, however, in the Central and Eastern European Countries (CEECs). This has been discussed repeatedly in the framework of ECMT/OECD.

The special political and socio-economic situation that prevailed for decades until 1989 caused settlement patterns to be geared heavily towards public transport systems. As a result, conurbations have very high densities in rail- and tramway corridors, and in inner-city areas.

Yet this kind of symbiosis between spatial development and public transport did not lead to sustainability. At the end of the 80s, large portions of the transport infrastructure in Eastern Europe were decrepit. With the collapse of planned economies, it immediately became clear how uncompetitive many of the goods produced in the East would be on the new markets of the West. Declining employment was reflected in gross domestic income as well as in the state of public budgets.

Against this backdrop, maintenance of the transport infrastructure and rolling stock deteriorated even further. Central governments shifted responsibility for urban transport to municipal governments. Yet the release from this financial burden was not accompanied by tax reforms that would have delivered the resources for a commitment to public transport.

At the same time, the long-suppressed desire for individual driving and living in less densely populated residential areas was unleashed. Today, urban sprawl in the CEECs is in full bloom, and the decreasing use of public transport is swelling the deficits of its operators. External traffic costs are rising in both private and public transport.

Excursus: Too little consideration of urban sprawl in project evaluation

While we may blame ourselves, our countrymen and politicians for the now-worldwide phenomenon of urban sprawl, we should also notice that something has to change in the way our society and its think-tanks – and economists in particular - perceive and analyse problems:

A few years ago, ECMT organised a very challenging seminar on “Evaluation Methodologies for Infrastructure Investment and Urban Sprawl”. An important finding of the workshop was that social cost-benefit analyses are often dominated by the monetary value of the millions of hours of travel time that calculations show would be saved by infrastructure investment that would enable an increase in speed. However, this assumption needs careful scrutiny.

In some cases the intended increases in speed are not in fact delivered; in other cases they are offset by longer travelling distances. This may be interpreted as increasing the choice of destinations, but the problem is that if the resulting travel patterns lead to a reduction in the availability of local destinations, the outcome may be more travel but no increase in choice, or a reduction in choice for the less mobile.

Especially absent from social cost-benefit analyses to date is an appropriate factoring in of urban segregation from the increased mobility and urban sprawl that increases dependency on cars and leads to excessive consumption of land. This is because effects in complex mechanisms of causalities are difficult to quantify, and it is almost impossible to consider seriously any effect that might stretch out over several decades.5

2. Effective and less effective instruments to curb urban sprawl

2.1. Differing views on land-use planning in Japan

If I have a clear understanding of the history of planning in Japan, the following instruments can be seen as key elements:

• Designation of city planning areas by Prefecture Councils.

• Senbiki, which was introduced by the New City Planning Act of 1968. Literally, senbiki means drawing a line, and it refers to an urban growth boundary. It was designed to prevent urban sprawl by dividing city planning areas into two parts: Urbanisation Promotion Areas (UPAs) and Urbanisation Control Areas (UCAs).

• Land readjustment (kukaku seiri). This instrument was at first used primarily for agricultural land consolidation (in urban fringe areas of Japan most farmland is extremely fragmented into small, irregularly shaped plots), although it was soon put to use for suburban expansion projects as well. Land readjustment is, however, not seen as a planning method on a metropolitan scale. Primarily it serves small-scale development projects.

• Land-use plans, in a) a more strategic form as master plans and b) a mandatory form as zoning regulations. Land-use zoning provides a basis for regulating land-use and construction. Over the years, twelve categories of land-use have been introduced.

• Land development permission from the prefecture governor for the development of sites exceeding 1 000 sq. m. in Urban Promotion Area.

• Plans of Public Facilities

• Urban Development Projects.

Land readjustment is a land development technique that is used in many countries around the world. In essence, it is a method whereby an irregular pattern of agricultural land holdings is re-arranged into regular building plots and equipped with such basic urban infrastructure as roads and drains. A percentage of each landowner’s holding is contributed to provide land for roads and parks, and to cover the costs of the project – a type of self-financing technique for urban land and infrastructure development that is known as the genbu contribution.

Under special legislation adopted in 1954, land readjustment was used extensively in Japan’s post-war urban reconstruction process. It is responsible for some 30% of the existing urban area and is commonly referred to as “The mother of city planning” (toshi keikaku no haha). Another 1955 law created the Japan Housing Corporation (Nihon Jûtaku Kodan) with a view to promoting and carrying out land readjustment for residential areas in metropolitan regions.

Land readjustment also involves a carrot and stick policy: the carrot is a zoning bonus that encourages large-scale projects in Urban Control Areas. If such projects provide their own roads, sewers and other public facilities such as parks, a re-zoning to an Urban Promotion Area is possible. The stick, on the other hand, is that designated Promotion Areas can be downgraded to Control Areas if agreement cannot be reached on a land readjustment project.
Research in Saitama prefecture\(^6\) has identified various impacts of land readjustment projects because they are used in a range of different contexts. It is fair to say that such projects contribute to increased sprawl on a regional scale while largely failing to prevent it locally. Moreover, the *senbiki* system did not stop the spread of un-serviced development, but it did restrict it largely to Urban Promotion Areas. To promote the use of land readjustment for land development, in the 1980s the prefecture launched an aggressive (and successful) campaign to persuade landowners in Promotion Areas to start land readjustment projects by threatening to down-zone their land to Control Areas.

Also, the OECD report on urban policy in Japan\(^7\) states that there seems to be a tendency to locate projects farther and farther out on the fringes of metropolitan areas, thereby encouraging the spread of urban development. A feature of the Japanese planning system is the basic underlying principle of development in “freedom of development”, whereas many other OECD member countries have long histories of improving the attractiveness – and hence the competitiveness – of cities by guiding development appropriately with stricter urban planning regulations. Planning for, and regulating, development in Japan is difficult, as landowners’ and building-owners’ rights are seen as paramount. The traditional role of urban planning – of expressing and safeguarding “the public interest” – is harder to achieve in this context than is the case, for example, in Europe or Australia.

Other authors have argued that because Japan needed all its economic resources for catch-up industrialisation, the country could not afford city planning and the associated overhead investment\(^8\).

Land-use planning has also been described as too centralistic and authoritarian, too strongly dominated by Tokyo’s planning problems, too strongly growth-oriented and too tolerant of private sector interests, too liberal, and too confused\(^9\).

Still other authors, however, contend that land readjustment is doubtless to be counted among the strengths of the Japanese town planning system. In particular, the involvement of landowners in the creation of public infrastructure and the financing of projects by means of the *genbu* contribution warrant emphasis. And Japanese cities, thanks to very undifferentiated and coarse-grained land-use planning, largely escaped the exaggerated form of functional separation that has been practised in the West since the Athens Charter. The only exceptions are the sub-areas that were developed in conscious emulation of modernist Western planning experts, such as New Towns in the hinterlands of metropolitan areas and urban development projects on reclaimed coastal land. Functional mixing and multi-functionality, which are basic premises of urbanity, are thus strongly represented in Japanese cities\(^10\).

Now, after this multifaceted discussion of Japanese planning instruments and their merits, let us turn to Europe.

2.2. **Strong focus on restraining urban sprawl and linking urban development with public transport in Europe**

Here I am referring to a recent 2003 ECMT publication entitled *National Reviews* in conjunction with the Conference’s work on “Implementing sustainable urban travel policies”. The report states that basically


most countries have undertaken initiatives to improve the integration of land-use planning with transport policy.

The Netherlands has perhaps the strongest tradition in this area. Well known is its so-called ABC (“the right business at the right place”) Policy. While this is a national land-use planning concept, its implementation rests entirely with the cities. The cornerstone of this approach is the development of accessibility profiles for different locations, and of mobility profiles for different types of businesses. Locations are classified as A, B or C on the basis of accessibility by public and motorised transport. Mobility profiles are assessed according to the labour- and visitor-intensity of each type of business, its dependence on cars for business purposes and the extent to which roads are used for deliveries and distribution of goods. The planning process then seeks to match the accessibility characteristics of locations with the mobility profiles of different activities in such a way as to meet the basic accessibility requirements for different types of businesses, whilst maximising the utilisation of public transport.

Theoretically, the incentives of the ABC policy are on target; in practice, however, they appear to fall prey to economic pressures, with loopholes that weaken the strategy overall. The Dutch report also hints at difficulties in ensuring that standards are applied evenly by neighbouring municipal authorities, with instances of competition to attract business.

In its recently published “National Spatial Strategy” (Nota Ruimte), the current Dutch Government has revised the content of earlier policy to reflect its own priorities. The whole tenor of the strategy has changed. The economy now plays a greater role, and the Government wants to create more space for development. This gives greater responsibility for action to other players: the provincial and municipal councils, the institutions of civil society, and not least to individual citizens. It is primarily the method of governance (the “how”) rather than the policy content (the “what”) that has changed. Public authorities will have to take on the role of partner to enterprising individuals and companies, reinforcing the dynamics rather than working against them through a complex system of rules. The ABC policy has been replaced by an integrated location policy that serves various purposes: economic development opportunities, accessibility and liveability of the surrounding environment.

Norway is examining the possibility of adopting a Dutch-type ABC zoning system. For more than a decade Norway has sought satisfactory arrangements for regional-level transport and land-use planning. The Plan and Building Act provides the framework for national goal-setting that is reflected in local and county planning. However, the administrative separation between county and municipal government can thwart integrated planning of transport services in and around urban areas. Some promising experiments involving the largest cities have failed, due in part to the lack of a formal tie-in with established planning processes. The search for improved arrangements continues.

In France, procedures for drawing up collective urban mobility plans (PDUs) were introduced in 1982 and made obligatory in 1996 for cities with a population of over 100 000. The plan for Paris was completed at the end of 2000. These plans seek to co-ordinate transport and land-use planning in order to promote a sustainable balance between mobility and accessibility, on the one hand, and health and environmental protection on the other. The law mandates improvements in safety (particularly for pedestrians), reduces car traffic, promotes walking and cycling, optimises use of roads and parking space, improves the organisation of freight deliveries and ensures that employers encourage their personnel to use public transport and car pools. The law also requires the introduction of integrated fares and ticketing for public transport. The plans’ first achievement has been to raise the awareness of the public and their local representatives of the issues involved, and to create new links between the many players involved.

German cities have begun to place emphasis on mixed development, preserving areas where housing, employment and social services exist in close proximity, developing other activities in single-use areas
such as housing estates, and ensuring that greenfield developments include a mix of housing, employment, services and leisure facilities.

**Portugal** cites some success – notably in the city of Evora – in developing integrated local traffic and land-use plans, redirecting car traffic away from city centres and enhancing public transport services with such initiatives as park-and-ride systems, financed partly through the introduction of centre-city parking charges. Ultimately, the intention is to introduce a cordon charge for entering the city centre by car.

**Several countries** report measures to limit or suspend out-of-town shopping and commercial developments, reflecting a strong preference to locate such complexes within existing urban areas and thus avoid creating unmanageable new demand for transport. Some of the measures taken appear so stringent that they may run a risk of backlash if they cause municipalities and businesses to believe that economic development is being stifled. Finland reports restrictions that, although not absolute, effectively result in a ban on development outside town centres, whilst Norway has suspended such projects for five years while a long-term policy is formulated.

**Poland** reports widespread uncontrolled and unmanageable out-of-town developments as one of the major forces driving urban areas away from sustainable development.

The most widely accepted suggestion is that decentralised concentration based on transit lines, as practiced in **Denmark and Sweden**, might be the most promising approach. The development of concentrated multi-purpose clusters centred on major public transit facilities would allow many requirements to be satisfied within local areas, reducing the need for long trips to city centres.

In my own country, **Switzerland**, the restraining of urban sprawl was initiated by cantonal (prefectural) laws. The first law that distinguished agricultural land from buildable land was passed in 1929 in the canton of Geneva. But legislation of this type had to be supplemented by the much stronger federal Protection of Water Act in the wake of World War II, when the pressure for land use was intense. Under that law, community building permits could be issued only after a sewer system had been established in the area in question. Because sewer systems are expensive, only concentrated and well-delineated developments were possible.

Then, in 1979, the federal Spatial Planning Act was adopted. Its innovation was to create strong interactions between settlement, infrastructure and landscape planning on the cantonal and community levels. The cantons had to distinguish between areas that were needed to meet building demand over a 25-year period, and areas for later development. This is to some extent similar to the Japanese *senbiki* system, but the time frame for development forecasts in Switzerland was obviously too long.

Because communities in Switzerland levy their own taxes, each of them wants to attract as many residents and businesses as possible. The resultant political and economic reality spawned excessively large building zones, prompting the federal government to introduce still another instrument requiring each community to set aside a certain amount of farmland that could contribute substantially to feeding the population in the event of a crisis. All this shows that even in a country with a long tradition of regulatory instruments, spatial planning – and especially the containment of urban sprawl – is a somewhat Sisyphean task.

Within buildable areas, Swiss communities apply something similar to Japan’s Land Readjustment system, enlisting private investors in the financing of local infrastructure and providing bonuses for greater land use if projects represent added value for the public. Cantons are empowered to approve such schemes, as are prefectures in Japan.
At the federal government level, there is some innovation in the sense that departments responsible for roads, public transport and airports have to develop sector plans that provide for proper integration of transport and land-use projects. The department of spatial planning assesses the efforts made by these other departments. Incidentally, spatial planning, transport and environmental issues are unified in one and the same ministry in my country. That alone should guarantee some co-ordination.

**Excursus: Possible impacts of pricing instruments on urban development**

Urban sprawl is often said to be the result of insufficient petrol prices which do not reflect the external costs of driving. In Western Europe at least, the level of fuel prices has for most people little or no deterrent effect on distances driven for commuting and shopping trips. In many cases, drivers may not consider any costs other than time. Congestion may thus have a clear impact on location decisions.

Nevertheless, many politicians and planners expect that higher transport prices will be able to break the trend of decentralisation and in time even lead to more compact settlements.

Unfortunately, empirical research has so far provided little evidence of such densification due to high transport prices. This is at least true for Western Europe, where the ratio of transport costs to income has never been as high as in Eastern Europe. Before 1989, driving 8,000 km per year required more than 10% of each month’s average wage for fuel alone in Poland, but only 2-4% in France. Only if variable costs are so high can there be a substantial impact on settlement patterns. Yet in the Western context, highly efficient prices are in general not politically acceptable, and acceptable prices are not efficient.

In 2002 the ECMT devoted its Round Table 124 in Paris to the topic “Transport and Spatial Policies: The Role of Regulatory and Fiscal Incentives”. The report shows that the effects of pricing measures cannot be grasped easily. The introductory paper put it as follows: “The (potential) impact of road pricing on local decisions may be a problem. If it means that people move their place of living to areas where transport costs are lower, then it thwarts any efforts made in the planning sphere to promote concentration”. To that statement, however, we must add that congestion in urban areas (one pays with one’s own time-budget) may similarly provoke decentralisation.

3. **On-going urban sprawl?**

Let us go back to the phenomenon of urban sprawl as such and ask the somewhat heretical question of whether – at least in Japan and Western Europe – it is really proceeding at a disturbing pace. Are we still in the phase where there is more travel over longer distances, and are cities still becoming less concentrated as networks expand? Do we still have to complain about continuing decentralisation and people living in ever more remote locations, far from their work and social networks?

Allow me to interpret current spatial development trends somewhat differently. My point of departure is another set of contextual factors in all of the three component dimensions of sustainability (social, economic and environmental):

1. There is a socio-demographic trend towards population ageing and single-person households. Neither of these growing groups is as keen to live on the outskirts of settlements and in green areas as was the earlier fast-growing group of families with children.

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12. ECMT. Round Table 124.
2. Over a certain period, the switch from an industrial to a service economy led to increased demand for land. This was the time when industry had given up production in Western countries but had not yet turned to efficient real estate dealing. Today we are seeing large-scale reconversion of previously industrial land to offices and housing. This process happens mainly in urban areas and near railway stations, because industry originally depended on public transport.

3. We live in a time in which important declarations of ecological targets have been formulated and widely accepted in a strenuous series of international conferences. As a result, a State that takes measures for environmental protection finds itself less fearful that its undertakings will make it less competitive as compared with other States. International agreements can neutralise pertinent locational factors. At the same time, rating agencies pay more and more attention to environmental quality.

With this background we can increasingly identify in Japan and Europe a very strong counter-movement to urban sprawl, namely re-urbanisation and the re-vitalisation of cities.

4. Re-Urbanisation: The shift towards inner urban developments

4.1. Eye-catching urban renewal initiatives in Japan

In Japan, urban renewal takes place under several headings:\(^\text{13}\):

- **Reconversion of un- or under-used former industrial sites and railway areas.** An early example of such development is Nishi Shinjuku in Tokyo, on the site of a previous water treatment plant. Today it is a large secondary centre close to a railway station. Other examples in Tokyo are a new centre in what used to be the Shiodome freight yard and the multifunctional Yebisu Garden complex in the area where a brewery once stood. In Osaka, the old container distribution area of Nishi-Umeda was converted into a multifunctional trade and service centre dubbed Takami Floral Town, on industrial fallow. The peculiarity of several such large undertakings in Japan is that the municipal government can act as a “public developer”. As such, it raises the funding for investment by issuing bonds. Another model is that the public authorities retain ownership of the land but grant private developers concessions to build on it. Projects on private land obviously require land readjustment and thus entail *genbu* contributions to provide space and finance for public facilities.

- **Waterfront developments, reconversion of former harbours.** Examples in Tokyo are the Azumabashi River Pier multifunctional development centre in Sumida-ku, the waterfront sub-centre “Tokyo Teleport Town” (later renamed “Rainbow City”) and the large housing estates Sakuranomya-Nakano on the Yodogawa riverfront and Okawabata River City 21. Projects such as these involve both public and private ownership and have received support from the State programme for the promotion of “special housing estates”. Rents are subsidised down to a level accessible to low- and middle-income households.

- **Urban renewal in degraded areas.** Examples include Minami-Oshikiri in Nagoya and Daykanyama in Shibuya, Tokyo. Often, however, renewal efforts are met with resistance from residents who are urged to resettle. Careful upgrading processes are therefore conceived with input from citizens (in the so-called *ma chi zukuri* process), as illustrated by the examples of Mano/Nagata-ku and Higashi Kawasaki in Kobe.

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• **Disaster prevention.** The frequency and intensity of earthquakes in Japan is another reason for urban renewal. The great Hanshin-Awaji earthquake made people aware of the value of green space and natural buffers to reduce fire hazards. In rebuilding the city, Kobe is emphasising the establishment of “disaster prevention parks”. As in the aforementioned upgrading of residential areas, homeowners often resist the government’s relocation efforts, despite the best intentions for their safety. In the Kyôjima area of Sumida-ku, Tokyo, where disaster preparedness measures are being taken, a participatory process was therefore a must. Another challenge for Japan is to renovate disaster-prone districts without losing the character and cultural value of traditional dwellings.

• **Population ageing.** Another acknowledged reason why it is necessary to revitalise districts and inner cities is the ageing of the population. Pertinent reshaping of public space is a must. Fundamentally, Japanese cities, with their multifunctionality and current availability of inner-city land open for new uses, have a good chance of fulfilling the three criteria of ecologically, economically and socially sustainable development in the course of internal urban expansion. In particular, some of the large-scale conversions of former industrial and transport sites for public housing in Osaka, Kobe, Nagoya and Tokyo are exemplary.

4.2. Similar developments in Europe

Cities in Europe, like those in Japan, are in a phase of profound transformation. A European research project entitled “Governing Cities on the Move” has recently characterised the process and requirements of such transformation as follows:

“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.”

I assume that the same holds true in the Japanese context. Instances of transformation in Europe resemble those in Japan to a large extent, with both reflecting the general conversion of the industrial sector to the tertiary sector, changes in the structure of transport, and changing lifestyles.

The key focus of spatial policy is clearly with urban transformation projects that create higher concentrations of new workplaces, shopping facilities and housing, and with travel destinations and origins at high-capacity railway stations within cities or on their outskirts. These stations are often in the immediate vicinity of industrial fallow land or former marshalling areas or freight centres. With little interaction with the authorities, market forces seek to reconvert land use, and political objections may be limited to the amount of authorised parking space. Examples here include a large railway plot in Turin that was cleared due to the construction of the Crossrail Line; in Zurich North and Zurich West, due to the transfer of the Swiss machine industry to the Far East and Eastern Europe; and - on the largest imaginable scale – the new urban structures of Emscher Park in Germany’s Westfalia, due to the abandonment of coal mines.

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Some of these redevelopment projects were implemented under special legislation. This was the case for the London Docklands, implemented following the introduction of the “Enterprise Zone” concept. Enterprise zones were an experimental measure designed to encourage private development in declining areas by removing some tax burdens and by operating simplified planning procedures. In terms of the main topic of today’s discussion, the “Integration of Transport and Land-use Planning”, it should be said that efforts in the Docklands have only gradually delivered satisfactory results.

In terms of urban regeneration, post-war high-rise housing areas present special challenges in Europe. Technically and in terms of comfort and the urban environment, these very densely built areas are now in poor condition and require rehabilitation or replacement. Well-known examples are Gruenau in Leipzig, Europark in Antwerp (which was constructed along the lines of an ideal design by the world-famous architect Le Corbusier) and Ballymun near Dublin. Of the three examples mentioned, the first is in a good location on a railway line and the second is a short walk from the city centre while the third, Ballymun, is to be served by light rail.

Another important feature of urban regeneration is the upgrading of the urban landscape. A key element is the regeneration of the waterfront, be it the sea coast in Barcelona or the riverside in Bilbao or Paris. As well as contributing to the image of a city, this also contributes to the reduction of recreation-oriented car traffic. Another key element, aimed at achieving similar goals, is freeing parts of the city from car traffic, as in Milan or Berlin, for instance. Pedestrian areas, as well as being pleasant, have proved to be profitable for inner-city trade.

A completely different example of linking transport policy and spatial policy are “Airport Cities”, as they are known. Airports have become key facilities for the competitiveness of any territory. But they have now become more than just airports. From their role on the fringes of the basic machinery of transport, airports have become key transport infrastructures in the transformation of metropolitan areas. Propelled by a series of strategic investments, they have assumed the key position in High Speed Train, railway and light-rail networks, a position which until recently was reserved for central stations alone. Airport operators thus subscribe to new business opportunities with a stronger focus on commercial and real estate development.

Today, spatial planning at airports not only has to deal with the well-known problem of noise carpets, it also has to organise airport cities in terms of both land-use and local transport. Examples where the challenges of this combined task have been handled well are Amsterdam (Schiphol) and Helsinki (Vantaa), among others.

5. Regional bodies for urban development and transport problems

It goes without saying that the task of integrating transport and spatial development planning covers a broad range of issues that cannot be dealt with at the municipal level of a city alone. While, at least with regard to the shaping and financing of transport, regional bodies with wide powers are common, regional land-use planning is often of a somewhat more “remote” nature and as such is not able to launch desirable developments.

Japanese planning legislation provides for tools at national and prefecture level that can be used to integrate local and regional land-use planning. A national government decree of 1995 authorises local authorities to promote and implement co-operative agreements by setting up Administrative Unions and Regional Associations. Yet, although the amendment of the Law on the Promotion of Decentralisation in 1999 requires a “parallel” relationship between the prefecture and local councils, in practice the 16. Gueller Gueller. From airport to airport cities. Barcelona 2003.
relationship is “vertical”, since subsidies are granted by central government to prefecture councils, which then distribute them to local councils.

About half of the Regional Associations in Japan are multifunctional in nature in that they have regional strategies covering the environment, natural resources, transport, cultural welfare and so on. Land-use planning, on the other hand, is not considered to be a priority issue.

In larger cities, where traffic congestion and suburban development are problems and where regional planning faces special difficulties, mergers of local councils are seen as one of the solutions. Council mergers are desirable for financial efficiency; their authority and funding source is clear and they also circumvent some of the problems of Regional Associations, e.g. lack of authority and unwieldy decision-making processes\(^{17}\).

In European countries, too, regional planning bodies and transport authorities can take a number of forms and have very varying functions and powers. Regional models with a wide range of functions, directly elected legislative and executive council members, clear representation with regard to exterior relations and even some financial and taxation powers are generally rare. We find them for instance in the “Communautés d’Agglomération” in France and several regional associations in Germany (“Region Hannover”, “Verband Region Stuttgart”). In the Netherlands this model was tried out in the 1990s, but was abandoned again for several reasons among which democratic deficits weighed heavily. In the UK, the London County Council was dissolved due to political rivalries among the various levels of government and political parties.

More often in Europe we find mono-functional regional associations that are either involved in transport operations on a more strategic level from the standpoint of spatial planning or location marketing. However, the time has come for a more focused approach and for closer interaction between cities and their suburban area at both strategic and operational level. The newest wave of metropolitan institutional reform is focusing upon economic priorities such as promoting territorial competitiveness and attracting external capital investment in the context of supranational trends. Loose co-operation patterns among communities may not be sufficient to face these challenges. Metropolitan governance is increasingly becoming an entrepreneurial task that requires political leadership and also involves project partnerships with private enterprise.

6. Interaction of spatial and transport policies at interregional level

In this last section of my contribution, let me turn to the interaction of transport and spatial policy at interregional level. As far as transport is concerned, this means dealing with highway and long-distance railway schemes. For spatial planning, it means that regional policy aspects have to be taken into consideration.

Japan is elongated in shape and has its own specific needs for efficient transport connections. The implementation of the high speed Shinkansen system, in 1964, was an appropriate answer to that challenge. At the same time, it supported the National Spatial Development Plan of the early 1960s and a policy for building new industrial towns in order to relieve pressure from the three metropolitan areas of Tokyo, Nagoya and Osaka. Both its transport and spatial development projects led to a further concentration of the economy and population along the pacific belt.

The reaction of prefectures not located on this belt was harsh. While discussions continue as to whether the Tokyo metropolitan area is so important to the national economy that it needs to be reinforced,
or whether a more powerful and effective regional strategy based on a network of large and medium-sized cities will enhance Japan’s economic performance, the National Government has renewed a series of plans addressing the demand for a better interregional equilibrium in socio-economic development. Among other initiatives that could be mentioned are the Technopolis project and the Research-Core Concept, under which the prefectures receive greater powers and resources.

As for transport, the somewhat peripheral areas along the Sea of Japan and the islands in the Inland Sea are linked to the longitudinal Shinkansen lines by branch lines of JR or private railways, but are better covered by a close meshed highway network.

In Western Europe transport policies vary, at least as far as high-speed railway systems are concerned. The design of these systems to an extent at least reflects the basic regional policy of a country: sometimes they are designed as hub- and-spoke systems, as in France, sometimes network, as in Germany. If we look at the spatial dimension of investment in the Trans-European Network (TEN), we see that rail projects tend to be concentrated in the densely inhabited core countries of the continent, while in peripheral areas highway investment outweighs investment in rail.

In the Swiss microcosm, we face a highly specific situation in terms of railway policy. Some 30 years ago the National Transport Concept provided for a high-speed rail link between the West and the East of the country. However, the cantons that do not lie on this backbone criticised the concept and the Federal Railways then revised it so as to ensure better network effects throughout the country. The RAIL 2000 concept, as it is called, consists in providing a connections hub in each larger city. The aim was not that driving time between these nodes should be as short as possible, but as short as necessary in order to guarantee the system of country-wide connections. Each minute that did not have to be gained on the high-speed line represented some Euro 35 million or Yen 5 billion in infrastructure investment. Trains are scheduled to run at the same regular intervals – from 15 to a maximum of 60 minutes -- throughout the day. I am not a car owner and I do not depend on one because at the same minute past or to the hour, every hour, I have optimal public transport connections to the remotest village in the Swiss mountains and at least every 30 minutes to all larger Swiss towns.

7. Conclusions

In closing, I have to admit that, despite the title of my paper, I do not now find it all that easy to say what features of spatial and transport policy in Europe are of relevance to Japan. Policies and instruments do not differ a great deal between these two parts of the world. I think that both use similar language to describe similar problems and both face similar difficulties while implementing similar techniques to overcome these problems.

Let me say, rather, that what we can do is to share our common experience. I will nevertheless try to draw some relevant conclusions.

7.1. Re: Spatial Planning

There is no need to belabour the point that, in the future, there will be a need for planning instruments and measures that are capable of confining the development of settlements to limits set by policy. These limits must take account of the feasibility of serving areas by public transport. While reflecting local conditions and interests, they should also be underpinned by a policy of landscape-protection, preservation of valuable agricultural land, cost-saving provision of roads and sewerage and due care for social cohesion within communities.
The provision of housing subsidies should be conditional upon the implementation of such a land-use policy. Any potential increase in the value of land due to the provision of public transport should not be subject to such high taxation that the surroundings of stations become less attractive.

7.2. **Re: Public transport**

The basic prerequisite for orienting the settlement pattern towards public transport is competitive levels of service - from local level to regional and national level. Achieving network effects is a must as is having a high frequency, regular-interval service schedule, so that people can easily familiarise themselves with potential travel patterns. In cities it especially important that public transport by road has priority over car traffic. There is also a need for mobility management efforts by firms and schools with a view to promoting willingness to use sustainable modes of transport.

Railway stations should again be allowed to play the key role they once had in structuring spatial development before the car entered the scene. The immediate surroundings of stations should undergo urban upgrading and granted higher land-use allowances. Railway operators, the public authorities and private investors should engage in co-operative procedures to develop and implement high-quality development projects. The involvement of concerned citizens should prevent too great an increase in private traffic at these particularly high-value sites.

In this way, planning should contribute to a new and stronger orientation of urban development to core areas of settlement.

7.3. **Re: Car restriction policies, pricing measures**

Car traffic should be restricted in cities by the use of a clever mix of regulatory measures (traffic management, parking regulations) and pricing measures (parking tariffs, road pricing), because it is precisely in and to cities that public transport offers excellent services. On roads and junctions, public transport should clearly have priority. Road projects that offer additional capacity should be carefully evaluated using the newest methods and any such evaluation should include their contribution to the creation of urban sprawl.

A joint OECD/ECMT group has in the mid-nineties identified three distinct strands to cope with urban development and transport problems\textsuperscript{18}. The first strand consists in the adoption of “best practice”. This would involve the wider use of tried and tested measures. The second strand is based on innovations in land-use planning and traffic management. Land-use planning measures would be concerned with the types of settlement that should expand and the tools to promote such developments. Traffic management would include an integrated package of pricing measures that are also put into the service of spatial policies. The third strand consists in implementing a policy of sustainable development that is co-ordinated across all levels of state. It is essentially based on progressively increasing fuel tax to cover the true costs of car traffic and to bring that mode of travel generally back to a level at which all other traffic management and spatial policy measures become more effective.

No doubt there is especially broad scope to deepen the understanding of pricing and fiscal measures and their impacts.

\textsuperscript{18} OECD/ECMT. Urban Travel and Sustainable Development. Paris 1995.
7.4. Re: Urban Development policies, Inner city development, re-urbanisation

Urban development policy should orient itself more toward quality gains in cities in terms of re-urbanisation, urban renewal, rehabilitation of residential districts, upgrading of spaces that are of high landscape value or that make a valuable contribution to local identity in the cultural sphere, among others. Cities must also become more residential again. Due account must also be taken of the changing lifestyles and needs of society.

The choice is between a passive and an active stance in respect to change. Rebuilding cities may well be the major form of infrastructure investment for the foreseeable future in OECD countries, which already have high levels of urbanisation. When nothing is done about urban problems, it is understandable if people and investment move elsewhere.

For the transformation of urban space one has to find better forms of Urban Governance. There is thus a need for networking that involves all essential actors (those who are interested and those who are negatively affected). Negotiation can help to replace or at least reduce the regulative brushwood that has grown over time.

Airport cities, which are in a way the cities of the future, have to be handled with special care as the interests of airports and their surroundings differ.

7.5. Re: regionalisation of urban development policy

New frameworks of metropolitan governance have to be developed for political leadership and negotiation on a number of major regional issues, from economic development policy, location marketing and infrastructure planning to the management of suburban sprawl, environmental sustainability and democratic accountability.

7.6. Re: country-wide regional policy

Regional policy should be supported by a dense network of transport services. One has to find a well-balanced mix between high-speed trains and regional public transport services. Both levels of service have to be properly integrated.

Regional policy should aim at concentrated decentralisation. This, together with the transport policy outlined above, will lead to less spatial and traffic pressure on metropolitan areas. Regional policy is dependent on attractive cities – the drivers of a modern society. In this sense, country-wide regional policy and urban development policy are mutually supportive.

All this shows that the “interaction of transport and land-use policy” is a multi-faceted task. There is a clear need for a consistent, broadly based philosophy and orientation of the mind towards sustainable development. Based on that we have to look for better vertical coordination of policy-making and implementation among the levels of Government (national, regional, local), horizontal coordination among the different branches of public administrations (transport, spatial planning, economic development, environment), intensified public/private co-operation and adequate forms of people’s participation.

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