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Example:

In **Tokyo**, the neighbourhoods outside the railway loop line – the Yamanote Line – have been substantially developed by private rail companies such as the Tokyo Corp. Railway line planning and neighbourhood development were handled in an integrative way and from one source, with the result that, these days, there are so-called „Rail-Integrated Communities“ (Calimente {# 25}). The station forms the core of such a residential area and often includes extensive shopping and leisure facilities. The neighbourhoods are characterized by a bicycle- and pedestrian-friendly infrastructure, a very high proportion of public transport vehicles in the modal split, as well as the quality and frequency of local public transport. By creating attractive residential areas and leisure facilities along their own routes, the transport companies are pursuing the goal of ensuring high passenger numbers in the long term.

1. Differentiated description of the key field

The concept of rail-integrated communities pursues the same objectives as the better-known concept of transit-oriented developments (TOD).

The aim of TOD is to increase access to local public transportation and avoid traffic in general or to switch to more sustainable forms of transport. A train, bus, or metro station, surrounded by a relatively dense mixed-use building development and adjoining residential areas, forms the core of such a district. Transit Oriented Communities are usually created within a radius of up to 800 metres from a public transport station and include other measures that incentivise non-motorised private means of transport and local public transport (e.g. bicycle paths, bicycle parking garages, etc.).

The introduction of the concept of rail-integrated communities is the specific consequence of implementing of the TOD concept. In the case of Tokyo, private companies are responsible for developing the railway lines and adjacent areas. The areas are developed along the railway tracks, starting from the stations, which ensures the necessary passenger flow for the company. At stations, there is no parking for cars, but for bikes; the infrastructure is pedestrian and bicycle friendly; and the frequency of public transport is consistently high (even outside working hours); rents and land prices increase the closer they are to the train station. This profit-oriented approach makes transport operations over short distances and the residential areas more efficient and attractive.

2. Reference to sustainability:

Integrated rail and neighbourhood planning facilitates very easy access to mass means of transportation. The car is no longer a necessity but a „lifestyle choice“. This is an absolute prerequisite for reducing traffic and achieving a modal shift away from private motor vehicles. Linking this up with other policies which favour the use of public transport increases this effect (e.g. expensive parking spaces, high vehicle tax). In Tokyo, public transport today accounts for one of the highest shares of total traffic volume in the world and the city has very low car ownership rates.

Risk if ignored:

If the planning is carried out by private companies, it is obvious that planning will have to follow more commercial rather than sustainable guidelines. Even if the company is keen to put traffic „on the rail“, it can be argued that by planning measures, such as building a dormitory town at one end of the city in combination with the development of a business centre at the other end induces additional traffic. On the other hand, there is the counter-argument that without a certain mass the public transport system could not be operated at the same quality and price, which could lead to a decrease in attractiveness and a shift back to private transport.

Should a line become unprofitable, it might cease to exist and supplies cannot be guaranteed.

The integrated planning of railway lines and urban districts and the creation of more mixed neighbourhoods with a high quality of life is the key to a modal shift away from private motor vehicles.

3. Relevance to industrial sectors?

Mobility:	High
Energy:	High
Production & logistics:	High
Security:	Low
ICT?	Medium
Water infrastructure:	Low
Buildings:	Medium
Governance:	Medium

Brief description of the high level of importance:

The measure is clearly a mobility sector measure. Integrative planning creates an attractive public transport service. The public's mobility behaviour shifts away from the road towards rail, cycling and walking.

There are also important implications for the sectors of production and logistics and energy. The infrastructure created may also be used by logistics companies (not substantially in Tokyo). At the very least, however, the less congested

roads benefit the logistics sector. The transport sector also accounts for a large proportion of the energy needs of a city. The modal shift to rail reduces the need for motor fuels while electricity consumption increases.

Neighbourhood development also includes the construction and sale/rental of residential and commercial buildings. In order to make the developed neighbourhoods attractive for customers, high-quality buildings (possibly also energy-efficient showpiece properties) are built.

The field matters with regard to ICT: a variety of data is collected through the use of EC cards in shops and on means of transport; this results in a variety of analysis options and the question of data protection may also arise.

4. **Impact:**

- Modal shift and improvement in air quality
- Residential areas with a high quality of life (fewer traffic accidents, close to shopping and leisure facilities, etc.)
- Reduction in costs for the public sector
- Thanks to the economic interests of the rail operators, structural urban planning and the distribution of various uses along the railway track may give rise to multiple journeys

5. **Implementation measures:**

- 1.) Increased participation of private companies in transportation planning
- 2.) Avoidance of park and ride schemes or parking spaces for cars near the train station
- 3.) Mixing residential areas with schools, offices, shopping and recreational facilities in order not to induce any additional traffic
- 4.) Creation of safe pedestrian- and cycle-friendly station areas
- 5.) Creation of an integrated transport supply (not only during working hours) in order to make vehicle ownership completely unnecessary
- 6.) Introduction of supporting measures that promote public transport: increasing parking fees and restrictions when parking in public spaces, increasing vehicle and fuel taxes, introducing or increasing road use charges/tolls, the employer paying the commuter pass, etc.

6. **Actors: Who can shape things? With whom?**

City administration: The city administration undertakes, along with the participation of the transport companies and road users, the planning of new railway lines and puts the development out to tender.

Transportation companies: Transportation companies deve-

lop the railway lines and adjacent neighbourhoods with the assistance of their own subsidiaries or cooperating companies; cooperation between transportation companies to coordinate timetables, payment systems, etc.

Road users/neighbourhood residents: A representative of the road users is integrated into the planning of the network expansion; residents pass on their comments and suggestions to the transport companies

7. **Prerequisites:**

- The railway companies must be allowed to engage in other business sectors (real estate and housing industry, etc.)
- The trend of transport companies in Tokyo becoming conglomerates and the expansion into other business areas is also based on historical grounds (nationalisation of the railway, Kanto earthquake, relatively late boom in motorised private transport, etc.)
- Creation of a level playing fields for local public transport (cf. 5.6),
- Liberalisation of public transport (if development is to be done through private means)
- Attitudes to car ownership
- Strengthening the cooperation between public and private sectors, increase in number of residents
- Rise in population

8. **Obstacles/barriers:**

- Fear of the privatisation of basic services
- Naturally evolved towns aligned towards private transport
- Lack of population growth
- Attitude towards public transport and car ownership
- Lobbying of car manufacturers
- Lack of large conglomerates

9. **Indicators:**

- Modal split
- Quality of public transport (frequency, cost, utilization)
- Number of available parking spaces relative to the number of inhabitants
- Land prices linked to the distance from the station
- Safety of pedestrians/cyclists (road casualties per year, presence of pavements/bike paths)

10. **Special features/remarks:**