

Urban planning and LRT systems in Europe

Lessons learned from the modern French tramway experience

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ABSTRACT

In France, the organization of public transport is based on the system of decentralized administration set up at the beginning of 1980s. For twenty years, the urban local governments thus had a total autonomy to develop their public transport systems in a context of car supremacy. The largest cities chose to implant heavy systems, among which the modern French tramway has experienced continued success. This success is based mainly on the opportunity offered by the tramway to reorganize the city, locally around the line, to a greater extent if we couple transport planning and urban planning. Tools exist now for this and local governments have to adopt Urban Mobility Plans (PDU) and Urban Area Integrated Schemes (SCoT) to go beyond a possible simple fashion and give the tramway its rightful place in urban policies.

PUBLIC TRANSPORT IN FRANCE TODAY

In France today there are approximately 240 urban transport networks, which serve populations varying from 10 000 to 10 million inhabitants.

The organization of local public transport falls under the responsibility of municipalities and groups of municipalities since the decentralization laws in 1982. Since then, urban local governments have had the choice to run their networks directly or by delegating them to a private operator. 90% of the French networks are run in delegated management today. Consequently, the public transport market is dominated by three large corporations (Veolia, Keolis and Transdev) which are also very well established on the world market. Since the 1970s, the urban communities have benefited from specific resources to finance their public transport systems: the Transport levy is raised on the companies located in the urban perimeter.

The large networks are equipped with heavy systems, metros and tramways, but France does not differ in this respect from its European neighbours. Nevertheless the renewal of the French tramway and the urban operations which accompanied it do not stop arousing the curiosity of public transport specialists, in France as abroad. To understand the reasons for this curiosity, it is necessary first of all to look into the evolution which has led to the current situation.

A BRIEF HISTORY OF FRENCH *RIGHT-OF-WAY* PUBLIC TRANSPORT SYSTEMS (TCSP)

Until the 1950s, only the city of Paris was endowed with a metro, built at the beginning of the twentieth century. As throughout Europe, most large cities were equipped with well developed tramway networks (there were 48 cities with tramways in France in 1946).

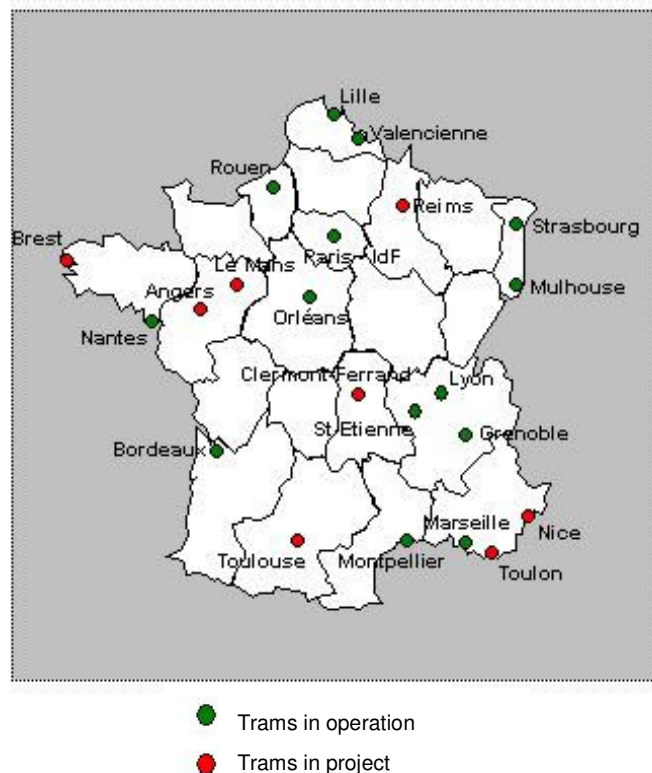
In the 60s, the private car began to assert its supremacy and, very quickly, French cities decided to adapt themselves to this. Apart from one or two exceptions (Saint-Etienne), all the French tramways were dismantled to make room for the car.

At the same time as the negative effects (congestion, pollution) of this “car culture” began to be felt, the first oil crisis, **at the beginning of 1970s**, incited the French State to boost urban public transport. The Transport levy (see above) was then set up and allowed the construction of the large metros in the provinces (Lyon, Lille, Marseille, Toulouse).

At the very beginning of the 1980s, the system of decentralized administration is set up in France. The Domestic Transport Orientation Law (LOTI) of 1982 determines the degree of responsibility which the various levels of local government (municipalities, departments, regions) have for organizing public transport. Cities continue to equip themselves but the metro system is only suitable for the largest ones. Nantes and Grenoble, a long time before the others, reintroduce the tramway in their networks.

The 1990s see the growth of environmental concerns. The Urban mobility plans (PDU), become compulsory for cities of more than 100 000 inhabitants in 1996 and impose a global vision of traffic organization. At the same time, the State, by its policy of subsidies, incites communities to build new public transport systems overground, by sharing public space between the various modes. This is when we can really place the renewal of the French tramway, with the construction of the first lines in Strasbourg, Rouen, Montpellier, Lyon...

After the year 2000, the State decides to complete the process of decentralization and takes advantage of it to reduce its public deficits. It asks the local governments to take full responsibility for their transport policies and it stops giving them subsidies. The French cities which want to start or complete their rapid transit networks are confronted with a serious financial crisis. Nevertheless, the French tramway continues to develop. In 2006, there are more projects than ever. Mulhouse and Valenciennes put their first tram route in service in the middle of 2006. Clermont-Ferrand plans to inaugurate its tramway on tires before the end of the year. Nice and Le Mans will open their first line to the public in 2007. Next will be the turn of Angers in 2009, Reims in 2010 and Toulon in 2011, without counting the new lines or network extensions of Saint-Etienne, Lyon, Montpellier, Bordeaux ...



TRANSPORT PLANNING AND URBAN PLANNING

We have seen how the State has been able to encourage the development of public transport (VT), overground in particular (higher subsidies). At the same time, some important legislation was passed which gradually assured the coherence between urban planning and transport planning.

The main transport planning tool, the **Urban Mobility Plan (PDU)**, was introduced by the **Domestic Transport Orientation Law** in 1982. The project ownership is entrusted to the Public Transport Organizing Authorities (AOTU). PDU's first objective is the development of public transport.

In 1996, the **Law on Air and Rational Use of Energy (LAURE)** gives to the PDU an environmental dimension. The objective now is to decrease car traffic. The PDU becomes compulsory for cities of more than 100 000 inhabitants. During that period, urban planning loses momentum. As a result, PDUs, which are normally mid term programming tools (5 - 10 years), have also integrated in the end a little long term urban planning too (10 - 20 years).

In the year 2000, the **Law on Solidarity and Urban Renewal (SRU)** is going to restore the PDU's initial purpose by making **Urban Area Integrated Scheme (ScoT)** the real tool for urban planning (horizon 20 years, revision in 10 years). The SRU law encourages cities to unify town planning and transport planning. The tramway project has to be part of the urban planning process, with all the associated urban projects. The urban development is organized around the public transport axes. The PDU once again becomes the tool for public transport policy

programming: structuring public transport around the tramway, reorganizing the bus network, examining issues such as transport on demand, social fares, information, accessibility, park-and-ride... The PDU has to ensure not only the balance between mobility needs and environmental protection, but it also has to strengthen the social and urban cohesion.

THE MODERN FRENCH TRAMWAY: THE REASONS OF A SUCCESS

The strong link created by the SRU law between transport planning and urban planning thus increases the success of the modern French tramway and explains the high number of projects, in progress or already in operation, in French cities in 2006, and this even in spite of the financing crisis mentioned above. But this success had already begun in the 1990s and the reasons are worthy of analysis.

The tramway is firstly a **transport tool**. It represents, amongst the range of different public transport systems, the best answer to a certain demand of capacity, commercial speed, comfort... It corresponds to the main orientations of the sustainable mobility policy advocated by the Air Law. With its dedicated platform, its priority at crossroads, it can reassert itself with greater credibility against the private car and reconquer part of the public space that cars have monopolized in cities. The first lines of the new French tramways, in Nantes, in Grenoble and in the large cities which will follow their example, are thus transport projects intended to relieve congestion in urban areas.

The tramway allows what the bus didn't. But neither is it a metro: it doesn't transport *enormous crowds in black tunnels*. It gives onto the city and is visible from the city. Architects, designers, landscape specialists are going to put this visibility to good effect by making the concept of sustainable development a little more tangible, the positive effects of which can normally only be seen in the very long term. The tramway gives an impression of immediate environmental improvement: silence and absence of air pollution, tree planting, grass platforms... The tramway makes the city *sustainable now*.

This reconquest of the public space, in cities from which the tramway disappeared for twenty or thirty years, requires practically a complete demolishing and re-building of the street. Whilst these works are a very obvious inconvenience, they have been turned by French cities to their advantage by taking the opportunity to revamp the street, from one side to the other. The tramway is also a **tool to enhance the urban space**. The radical transformation of *Le Cours des 50 otages* in Nantes (eight traffic lanes replaced by a standing esplanade where only the tramway and two lanes of traffic circulate), the removal of underpasses and the greening of the *Boulevards* in Grenoble lead the example. The tramway gives towns the means to restore, at least locally, the urban landscape which has often been disfigured by the car: removal of the truncating effects, traffic redirection, greater consideration given to pedestrians and cyclists, architectural station design. Tramway helps to reconstruct a quality city. The storekeepers, at first worried about losing their customers using cars, realize that a calmer environment can be profitable to them. Property values along the tram line quickly increase.

In addition to the rehabilitation of the urban fabric existing alongside the tram line, the transport project can also be the chance to help in the actual development of the city as a whole. The extension of the first tram lines built in large cities, by crossing through less dense areas further away from the city center, brings with it opportunities for

urbanization. This is the case in Nantes with the extensions of lines 1 and 2, in Grenoble with the extension of the D line towards Saint-Martin d'Hères, and with the extension of the T2 line towards Saint-Priest in Lyon. The tramway, in all these cases, fills in partly urbanized areas which lie between the main town and the surrounding districts. It can be the support for linear town planning which helps to structure the city by creating links, for example by connecting the center with these often peripheral social districts (*La Source* in Orléans, *La Paillade* in Montpellier). But it also allows for polar town planning, by organizing the city around its stations, by creating intermodal poles, by reorganizing traffic, by developing residential areas, businesses and other activities, by providing public facilities (*La Porte Jeune* in Mulhouse). The tramway is also very much a **tool for urban development** and should become one of the strongest elements of the Urban Area Integrated Schemes (SCOT) which have been since 2002 the urban planning tools in France. The Montpellier SCoT, adopted at the beginning of 2006 in a town whose population has increased from 200 000 to 400 000 inhabitants in 40 years, gave itself the objective of dividing by two the annual speed at which space is consumed by urban development, by increasing significantly the density of built areas. For this, it relies on the tramway.

AND TOMORROW?

The success of the modern French tramway is thus explained partially by the favorable context of decentralization from the 1990s to the year 2000, during which time a strong political will at the national level, combining incentives (VT, subsidies) and aids (laws, tools, methods), coincided with the emergence of strong local political wills, within which visionaries and forerunners created a competitive spirit which has continued since.

This success, though real, remains fragile. The "car culture" still has many followers, who contest the place taken from the car by the tramway in cities, who dislike the disruptive works which it causes and who criticize the public money spent on unconvincing results. The people in favour of walking and cycling estimate that the PDU, which is led by the Public Transport Organizing Authority, often gives priority to public transport and that the cost of Right-of-way Public Transport (TCSP) projects prevents cities from developing other alternative modes.

But even amongst advocates of public transport, the tramway has some critics. For some of them, tramway doesn't do enough for the city: only the metro allows a city to become a true metropolis (this is the reason why Rennes chose to build a metro system in spite of only having 376 000 inhabitants). This debate brings us back to the essential question of the image of dynamism and modernity which its public transport system can give to the city. Tramway promoters are also concerned by this point and sometimes it drives them towards an uncertain and expensive race for innovation. For other detractors, the tramway is on the contrary unnecessary and too expensive. Up to 50 000 travelers per day, Bus Rapid Transit ("Bus à haut niveau de service" in France) constitutes a sufficient answer in terms of capacity. Furthermore, BRT needs lower investment and does not require specific technology or know-how. These arguments are often used by the World Bank in its work with developing countries.

Tramway appears to be expensive sometimes, it's true, but we have seen that tramway is not only a transport tool but that it brings with it urban developments which can make the cost of the line kilometre vary between 12 and 35 million Euros.

If the direct costs of tramway are easy to determine and are often used as an argument against it, the revenue which is generated is more difficult to ascertain. The passenger revenue, for example, is probably sufficient to balance the operating costs on tram routes with a high number of passengers. However the rate at which revenues cover costs is often calculated at the level of the whole network and, as a result, the tramway suffers from the image of an unprofitable system which affects public transport when considered globally.

More and more, however - and the Urban Mobility Plans contributed to it - we try to take into account also, as a revenue, the reduction of the external costs of transport allowed by the introduction of tramway, in terms of air pollution, noise, road safety... but these effects remain difficult to estimate.

It would nevertheless be necessary to go further. If we agree to say that the tramway is an urban development tool, it is necessary to carry this concept through and try to estimate also what this tool brings back to the local community or to the society. If we are able to calculate what the tramway brings back in terms of reduction of space consumption, urban fabric enhancing, social cohesion, global image of the city... then we can hope to give a fair and realistic evaluation of the tramway. In this way, we shall understand a little better the reasons for its past success (local policy makers always make their choices for good reasons, even if these reasons are not always explicit or quantifiable) and we shall know better how to guarantee the conditions for its future success.