POSSIBLE LEARNING FROM FRENCH EXPERIENCE ABOUT LRT *

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1. Introduction

Japanese national administration, especially MLIT, has settled new incentive measures, including financial subsidies, in order to promote the implementation of new LRT projects. As a matter of fact, the state of development of new LRT lines in Japan stands behind the situation observed in almost all other OECD countries, from Europe to USA or Australia. Even in China, new implemented LRT projects are numerous. France with more than 300 km of new lines built within less than 20 years and other 300 km under construction to be completed till 2007 is the country with the most extended experience of new LRT projects.

The present paper invites to think if there is a possible learning for Japanese responsible people from the French experience. The main features characterizing LRT projects in France will first be summarized before providing information about the debate presently arising in France concerning the efficiency and financing of urban public transport, especially LRT. Analysis of decisive factors governing implementation of LRT projects is proposed before providing some considerations about the development of LRT projects in Japan.

2. The development of LRT projects in France

(1) Re-birth of Tramway in France: the pioneer case of Nantes

a) Scrapping and re-birth of tramway in France

Like in Japan but even more drastically than in Japan, France has scrapped 45 of the 48 systems of urban tramways existing at time of WW2. The website of the Association of Urban Transport Museum (Amtuir) [(1)] summarizes well this historical move. The last system to have disappeared in 1971 was located north of France in the city of Laon. The rapid development of motorization explains this move over a period of 25 years. Consequently, urban public transport which used to be until the 1960's financially self standing declined seriously. The central part of French cities declined too. It was surely out of question to scrap historical buildings located downtown, but they become unattractive for both families and companies because their lack of comfort and space convenience. It has been the beginning of the urban sprawl.

The first oil-shock in 1973 has accelerated the public consciousness that transport exclusively relying on car is vulnerable and that city centers have become poor spaces despite of their potential. Futuristic monorail or new guide-way systems have been largely studied but without implementation as in Japan, except subways in Lille and Lyon. In 1975, the French Ministry of Transport has invited by an official letter the major cities to plan surface public transport within exclusive lane. Simultaneously, an international competition was organized for rolling stock makers to propose a new kind of tramway hardware.

b) The case of Nantes

It has been the city of Nantes, actually outside of the cities invited by the Ministry, which has taken from its own the initiative to plan and realize what has become the first modern LRT inaugurated in January of 1985. The rolling stock was the model that French national administration wanted to standardize, the TFS (French Standard Tramway). Presently, Nantes remains the top running French city in terms of LRT network and usage, with a network of almost 40km and 210.000 passengers a day.

(2) The case of Strasbourg

Influenced by the neighborhood of Karlsruhe, Friburg and Basel, the city of Strasbourg was early interested by the implementation of an urban public transport guide-way system, since the year of 1975. But local difficulties to reach a political decision and minimum public

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consensus have delayed the final decision for 14 years, until the newly elected Mayor in 1989, Mrs. Trautmann was able to implement the plan on which she had based her election program. Presently, the network is almost 30 km long, with 190,000 passengers a day.

(3) Extent of LRT lines in France

The success of LRT in Nantes has inspired lot of other cities to implement a LRT project. According to the data by the Urban Transport Research Center (CERTU) of French Ministry of Transport and the Association of Local Transport Authorities (GART)[2], there are presently 311 km in operation and additional 350 km under construction in 19 urban areas, planned to be achieved till the next municipal elections of 2007. The Figure 1 shows the clear relationship between the date of completion of the projects in regard with the time of local elections.

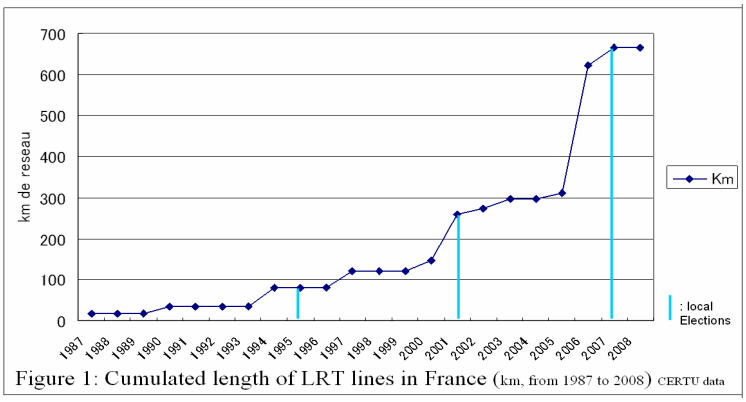

Figure 1: Cumulated length of LRT lines in France (km, from 1987 to 2008) CERTU data

(4) Fundamentals of LRT in France

We propose here three distinctive fundamental characteristics of LRT projects in France, far beyond specific technical features.

a) Full integration within global urban public transport system

Here above, the cases of Nantes and Strasbourg have been introduced. In both cases, even before the construction of new LRT lines, the local efforts by the municipalities for developing public transport through the bus system have been remarkable. The year before the opening of the first LRT line in 1984, Nantes had a bus lines network length of 614 km with 110 trips by bus per inhabitant, one of the foremost cases in France. Strasbourg was pioneer too, being the first city to introduce self validated tickets in 1969 and trip length independent tariff in 1976. In other words in those cities, LRT has been really considered as a natural means to overcome the limits of buses. LRT has been implemented as the proper means to provide more capacity where it was needed, on main bus lines. LRT is offering better economic efficiency through its higher capacity and speed, specifically more than 200 passengers per train and about 20 to 22 km/h commercial speed. LRT is also offering an enhanced image to strengthen the marketing competitiveness of public transport against the private car.

Generally speaking, LRT lines in France run in the center of the towns where demand is the highest with bus network completely reorganized upon LRT operation. Higher global speed of public transport obtained by LRT compensates eventual necessity for passengers to transfer on their trip from bus to LRT.

b) Integration with other urban policies and traffic control policy

In order to benefit from the financial subsidies by the Ministry of Transport at a rate slightly less than 20% of the global construction costs, LRT projects had to be implemented in coherence with the PDU (Plans des Deplacements Urbains, i.e. Urban Mobility Plan), compulsory for the cites with a population over 100.000 inhabitants since the LOTI law (Domestic Transport Basic Law) enforcement of 1982. Independently of national government subsidies, coherence is required, at first by the general local public, not only within the public transport field but also with other urban policies. As a matter of fact, this integration is quite natural in France because of the social purpose of LRT projects beyond their role as a transport means. A consensus prevails to keep a functional mixed urban land use and avoid as much as possible ghettoes. LRT lines are systematically considered as an excellent means of direct relationship between suburban collective housing or important social infrastructures like hospitals, colleges or universities and the center of the city, itself considered as the best and right place for all kind of exchanges, commercial, cultural, etc.

Traffic policy has been simultaneously implemented, with construction of ring shaped freeways, introduction of a clear hierarchy within the urban road network, with about 5 levels of street, from freeway to pedestrian mall.

As a symbol of this integration among urban policies stands the IUD governmental program established in 2001. It aims to provide tools for better project implementation and evaluation and gathers several national ministries, local authorities and local Urban Agencies. Twelve titles of studies or handbooks are already available with a dedicated page on web site of CERTU [3].

c) Public sensitivity to the subject often considered as a hot political subject, local political leadership

The sensitivity of French public against the question of urban public transport and urban public space is a reality. The best proof is the rank of the related policies on the agenda of candidates at time of local elections. A clear example is given by the new Mayor of Paris, Mr. Bertrand DELANOE, who has given priority to widen and protect bus exclusive lane together with the implementation of a first LRT line in Paris, the 10 km “Marechaux” line south of the city, to be completed by 2007.

Table 1: Operation of Public Transport in French cities:
Amount of vehicle x kilometers per inhabitant of the urban area

Urban area population	1997 (133 networks)	2002 (152 networks)	Evolution
more than 300 000 inhabitants	34,3	30,9	- 9,9 %
from 100 000 to 300 000 inhabitants	27,7	28,2	+ 1,8 %
from 50 000 to 100 000 inhabitants	18,0	16,2	- 10 %
less than 50 000 inhabitants	14,2	14,7	+ 3,5 %
Average for all networks	27,7	26,2	- 5,4 %

Source: CERTU

Table 2: Operation of Public Transport: seats x vehicle x kilometers

	1997	2002	Evolution
Cumulated population of the 20 surveyed urban areas	6 593 916	7 266 132	+ 10,2 %
Total quantity of seats x vehicle x kilometers (in thousands)	22 930 393	24 814 629	+ 8,2 %
Seats x vehicle x kilometers per inhabitant	3 478	3 415	- 1,8 %

Source: Enquete CRC (20 networks)

Table 3: Amount of trips by Public Transport per inhabitant of urban area

Urban area population	1997 (133 networks)	2002 (152 networks)	Evolution
more than 300 000 inhabitants	128,1	124,9	- 2,5 %
from 100 000 to 300 000 inhabitants	81,0	74,3	- 8.3 %
from 50 000 to 100 000 inhabitants	49,3	36,7	- 25,5 %
less than 50 000 inhabitants	32,1	27,0	- 15,8 %
Average for all networks	90,2	83,0	- 8,0 %

Source: CERTU

3. The debate arising in France about LRT efficiency

(1) The cut of national financial subsidies

An administrative decision in 1994 revised in 2001 has introduced a national system of subsidies for LRT projects confirming the principles of the personal right for transport and the priority given to public transport as stipulated in the basic law LOTI of 1982. This system of subsidies was not based on a selection of the best projects but automatically secured subsidies for all projects meeting minimum standards. This subsidy system was well adapted to the period of the mid 1990's where local leaders had to be helped by governmental support against eventual local opponents like shop keepers in the center. With the increasing enthusiasm of local authorities to implement new LRT lines, the burden on national budget rose recently very much. For instance, paid subsidies rose from Euro 67 millions to 204 between 1996 and 2001. The boom of LRT projects is confirmed by the increase of projects subject to approval: 10 projects between 2001 and 2003 meaning a total of Euro 286 millions, compared to 16 projects for the period of 2004 to 2007 and a total of Euro 600 millions. As a matter of fact, national budget restrictions led to a *de-facto* cut in the actual rate of subsidies, declining under the level of 10%, simultaneously not in accordance with legal texts and not satisfying local authorities.

Consequently in 2004 the government preferred to suppress the system of subsidies to LRT projects. This move made clear that selection and evaluation of the projects had not be undertaken with enough care in regard to the annual total amount of investment and operation costs for public transport in France: Euro 11,000 millions. However, short term countermeasures including long term loans at very low level of interest rate have been decided to help the numerous projects underway.

(2) Three recent reports

Three recent reports have tried to lay the basis of a debate towards re-evaluation of urban transport policy in France. The first [(4)] by the previous mayor of Strasbourg published in summer of 2003 is discussing the choice of policies, the second at the end of the same year [(5)] by a member of parliament is focused on finance, the third one just published by the Court of Accounts [(6)] proposes realistic measures.

(3) Summary of the situation prevailing in France

LRT has boosted the level of usage of public transport in the cities where new lines have been built. Inhabitants of cities with a population of more than 250,000 without LRT in operation ride public transport 80 times a year without notable change over the period from 1990 to 2003, compared to 150 times where LRT is in operation with an increase of +20% over the same period. Global production cost per trip is Euro 1.49 for a city without LRT compared to 1.16 where LRT is in operation, the cost increase being the same of +80% in both cases over this period of 14 years.

Table 2 shows that in France the increase of service is slightly less than the increase of population and that the operation of large capacity LRT trains allows to balance the eventual reduction of vehicles operation (Table 1). Table 3 shows that large cities networks succeed not to loose too much passengers, those cities often taking profit of a LRT system in operation.

Nevertheless, LRT has nowhere in France been able to modify significantly the modal split in favor of public transport over a whole urban area, the usage of public transport being anyway quite different in each urban zone, city center or suburbs. It should not also be forgotten that LRT is considered by French local leaders far beyond its role as a tool for mass transport.

4. Analysis of the role of LRT along a comparative perspective between Japan and France

(1) About competition between public transport and car

In Japan, number of passengers riding bus regular urban services decreases each year at an average rate of about 5%. Table 3 shows that in France too, this same rate is observed for small cities, -26% over 5 years. We therefore think that the introduction of LRT in almost all the 20 largest cities of France has enabled there the stability of public transport usage, a very valuable result. Even though analysis shows

that most passengers of LRT are young, elderly or people dependent on public transport, such a result clearly shows that there is no alternate besides LRT to increase the attractiveness of public transport in a frame of free competition with private car. For sure, this result couldn't be reached without simultaneous implementation of related urban and traffic oriented policies, not forgetting appropriate road investment. The challenge in Japan stands for such coordination of transport and urban policies.

(2) About city center revitalization

Introduction of LRT has enabled the revitalization of the city centers in France. More exactly, LRT has accelerated an evolution of the center areas which have changed and found their specific image and role, not in direct competition with suburban sub-centers. In Japan, central part of the cities often suffers a lot while sub-centers are quickly developing. LRT may certainly help to revitalize city centers but not as an independent or sole countermeasure. The concerned parties, especially shopkeepers, need to get a sufficient idea of a marketing plan to promote the city center, wards the aim of reaching a specific position in the city. The attractiveness of both LRT service and surrounding area has to merge in order to ensure the success of an urban revitalization.

(3) About competition among cities and local political leadership

Although in the mid 70's the French national administration tried to trigger LRT projects in some "top-down" move, immediate results didn't came out directly from such move. Successful initiatives came at bottom level from cities like Nantes, Grenoble or Strasbourg experiencing directly the necessity of a strong set of policies in order to reach their desired level of development. We think that consciousness of competition with other cities was a strong engine leading to initiatives including LRT. Nantes, as the leading city of western part of France, felt competition with cities of eastern part of France, closer to the center of Europe and major infrastructures. Grenoble is in constant competition with Lyon, Strasbourg is in constant competition with the closest cities of Germany or Switzerland.

Intuition by local leaders about the potential of LRT for the sake of urban development has never been enough to get local consensus about the LRT plan. Opponents systematically appear, car drivers or shop keepers, tax payers, etc. Strong local political leadership has been necessary to overcome such oppositions. In Japan, the question remains open about what may practically trigger new LRT projects.

Table 4: Revenues to Public Transport in France (Investment + Operation) (except Paris metropolitan region)

	2000	%	2002	%
Passenger Revenues	703	16,4 %	712	17,4 %
Tax on companies (VT)	1 696	39,6 %	1 844	45,0%
Contributions by local authorities	723	16,9 %	716	17,5 %
National Government subsidies	291	6,8 %	172	4,2 %
Others (loans)	868	20,3 %	651	15,9 %
Total	4 281	100%	4 094	100%

Source : compte national des transports, CERTU/SYSTRA, direction des transports terrestres

Table 4 shows the status of finance in France of urban public transport in cities except Paris metropolitan region, all inclusive, investment and operation. Tax paid by companies should not be considered as a magic tax but rather should be compared with the habit by Japanese companies to pay transport allowances to their employees. The contribution by local authorities is strictly related to reduction of tariff consistent to social role of public transport and optimization of tariff in relation to elasticity of demand.

We think that in Japan new LRT projects may hardly emerge without the re-assessment of public subsidies paid to urban public transport taking in account all effects of public transport on urban life, not only mobility but also economy, social welfare and environment. This may be less a question of amount of subsidies than rather a question of computation method.

5. Conclusion

France with more than 30 LRT lines projects undertaken or underway during the last 30 years is for sure an interesting reference from several points of view: planning, finance and operation management but also project assessment or consistency with other urban policies. LRT in France is not really competing with private car. LRT is merely a tool for urban and social management of French cities.

In this respect, the conceptual scheme of Japanese LRT, best fitted to the Japanese urban reality and local needs may need some additional studies and discussions.

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