Public Transport, Mobility and Metropolitan Strategies: how to transform cities for a better accessibility?

Workshop report
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Foreword

On November 24th 2014, a workshop on Mobility and metropolitan strategies took place in Hyderabad. This seminar launched a one-year cooperation programme on urban mobility between Hyderabad Authorities and the Urban Community of Bordeaux as they have previously expressed their willingness to strengthen cultural and economic links between the two cities.

To support the authorities of Hyderabad in improving their urban mobility policy and with the support of the Ministry of Foreign Affairs and External Action, Bordeaux Metropolitan Municipality is organizing, in partnership with the French association CODATU, a series of three seminars on the following question: "How can urban transport projects serve for strategic planning?".

The purpose of these meetings is to highlight the importance of integration of transport projects in the public transport system as well as in the urban space through a reflection on the relationship between transport planning and urban planning.

The first highlight of this project is the organization of a seminar in Hyderabad on November 24th, on the theme: “Public transport, mobility and metropolitan strategies: how to transform cities for a better accessibility?”. The local authorities Hyderabad Metropolitan Development Authority (HMDA), Hyderabad Metro Rail Limited (HMRL) and the Government of Telangana are particularly thanked for their support and participation in the success of this first seminar.

The seminar was organized along four main sessions, each one illustrating a specific theme: urban planning and transportation, nature, public health and transportation, economic strategies and transportation, inclusive urban planning and mobility policies. Each session was presented by two experts, one from each city, and then a workshop gathering all the participants occurred in order to build the first reflections in the form of a dialogue between all the stakeholders.
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- Mr. Michel Labardin, Vice-President of the Urban community of Bordeaux, in charge of mobility
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- Mr. Murali Krishna K., Senior Transportation and Urban expert, Egis India
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A particular thank is given to all the participants of the workshop.
Introduction: designing a city through public transports

India’s urban population is currently encompassing more than 300 million people, and grows dramatically. Urbanisation is then happening very fast, pressuring urban infrastructures. Many problems have already emerged in those large urban areas. Hyderabad, which is building a metro system, is aware that the implementation of a new infrastructure is an opportunity to reorganize the urban areas in order to make it more efficient.

The cooperation between Hyderabad and Bordeaux will give the opportunity for each city to share its experiences on urban planning, even though they are facing different challenges.

On one hand, Bordeaux which is the 3rd French city for its demographic dynamism encompasses less than a million inhabitants. The urban area is about 579 sq.km making it a compact city at the scale of France. On the other hand, Hyderabad comprises about 10 million inhabitants for 7146 sq.km. Despite the difference of scale, the two cities have a similar density of population approaching 1400 inhabitants per sq.km.

However, Hyderabad has to deal with multiple transportation issues that Bordeaux does not face any longer: the Indian city has a chaotic traffic, with absence of hierarchy between the roads, which leads to traffic congestion. The road management is very difficult. With the arrival of the metro system, the local authorities of Hyderabad have the opportunity to improve the traffic management, and so solve the different issues related to transportation. The city of Bordeaux is a typical case study in the enhancement of an urban area thanks to the implementation of transport infrastructures. In Bordeaux, it was the tramway network which made the metamorphosis of the city possible.

By restructuring mobility within the urban area, it is possible to re-design the entire city and shape it in a more livable way. Through city-to-city cooperation, Bordeaux's experience can benefit to Hyderabad and contribute to solve its challenges and set up metropolitan strategies through mobility policies.
I. Urban planning and transportation

The first session of the seminar successively presented the urban planning strategies of the two cities in light of their transportation issues.

Hyderabad has an impressive population projection: about 20 million inhabitants are expected to live in the metropolitan area by 2041 (source: HMDA). This population projection necessarily influences urban planning needs, but also transportation needs as mobility will also increase. Currently, the travel demand corresponds to 8.9 million trips daily. In 2041, 22.5 million trips are expected to take place in Hyderabad every day.

But the local authorities aim to change the modal split between private vehicles and public transportation, especially with the arrival of the metro network in 2015. In 2011, private vehicles represent more than 40 % of the trips generated and public transportation (suburban railways and buses) are about the same proportion (45.7 %). The projections for 2041 indicate a modal split in favour of public transportation, where it encompasses almost 60 % of the 22.5 million daily trips. The use of private vehicles is expected to decrease to less than 30 % by 2041. This modal shift to public transport relies on the implementation of 72 km of metro rail system and its extension to 417 km by 2041. Extensions of the suburban railways (MMTS) and BRT routes are also planned in order to promote Transit Oriented Development (TOD).

Figure 2: The public transport network proposed up to 2041 for Hyderabad (Source: HMDA).
Regarding Bordeaux’s population and its future trends, the city does not need to establish a mobility plan as gigantic as the one to be developed in Hyderabad. However, travel demand is growing faster than the population. The French metropolis which relies currently on 3 tramway lines and 80 bus routes needs to extend its transport network to reduce the use of personal vehicles, significantly responsible of GHG emissions and air pollution.

![Figure 3: The LRT (tramway) network of Bordeaux.](image)

During the 1990s, considering the size and the urban structure of Bordeaux agglomeration, tramway has been preferred to metro system. The tramway network is planned to be extended from 44 km to 77 km by 2020. The extension of public transport networks actually falls within a Climate Plan approved in 2011. It includes multiple actions to reduce GHG emissions. The reduction of the modal share of car is expected to decrease from 59 % to 45 % by 2020 and to 33 % by 2050 (source: Bordeaux Métropole). In parallel, alternative modes, i.e. public transports, cycling, walking should increase considerably.
These objectives of modal split evolution are however different regarding the location inside the urban area. Walking and cycling are really common ways to move in the historical city centre whereas people in the suburbs travel much more by car as average trip length is longer. Public transport facilities are extended to the entire territory, and more and more “park and ride” are provided along the suburban stations. Automobile users can thus easily enter the city without having parking or congestion problems.

A great importance is given to integration between transportation and urban planning. As the use of the automobile will remain outside the city centre, roads must be adequate to traffic projections. The suburbs of Bordeaux are also not meant to be too densified, and keep a maximum of natural spaces. In the city centre, natural areas are also preserved whereas density is intensified along public transportation networks. These actions are actually the two main land-use strategies of Bordeaux: to preserve Nature in 50 % of the territory and to build 50 000 dwellings along tramway corridors. Urbanisation is developed in connection with public transportation.

After the presentations of the situation in Hyderabad and Bordeaux regarding urban planning and transportation, a discussion was launched with all the participants. To guide the discussions, the moderators organized two short work sessions, questioning first about the challenges of Greater Hyderabad Metropolitan Area with the arrival of the metro, and the possible solutions.

The main ideas pointed out were about integration between transport infrastructures and other urban amenities, people’s information and participation, respect of architecture, traffic management, and integration of active mobility. The discussion was mainly articulated around the need of public participation during the construction of a public project. Citizens should be integrated in the various phases, from infrastructure design to implementation. Involving people helps to make a project more adapted to the real needs of the city. Participation will enable the population to understand and to seize the project.

Public participation can still be developed in order to give the opportunity to the civil society an opportunity to contribute to the metropolitan strategies. By organizing information and participation, local authorities who run urban projects can allow ownership from the people. Even if the task is not easy, the role of the local authorities is to consider the needs and integrate it into metropolitan strategies.
Other subjects were discussed, such as the design of public spaces near the metro stations. During Bordeaux’s presentation, the metamorphosis of the public space along the tramway lines was shown. The entire design of the corridor was reviewed from façade to façade, changing the urban context. The tramway was not only a transportation facility; it was a tool to magnify the city. A great importance was given to public spaces design and stations vicinity. It seems to be a crucial point to integrate the new transport infrastructure inside the urban landscape.

Integration between transport networks and urban landscape is also important to promote multimodality. As Hyderabad is very concerned by the challenges of multimodality, integration should be given great importance within the general urban designs.

Figure 5: Integration with the urban landscape is guaranty of architectural respect and citizens’ approval

Hyderabad

Bordeaux
II. Nature, Public health and transportation

The second session emphasized the challenges related to safety and health along urban transportation. Hyderabad is facing traffic management problems, and road accidents have become an important issue. Every year, 140,000 deaths in India are due to road traffic crashes. Hyderabad contributes to 1% of it, i.e. 1,400 deaths, and 44% of the victims are pedestrians (source: Embarq India).

But the issue of safety is not the only one resulting from actual traffic conditions: traffic congestion is also a severe problem that Hyderabad is facing. There is 3 to 4% of GDP loss due to traffic congestion. In addition to the economic damages, the environmental impacts are significant. Actually, traffic congestion highly increases air pollution, and thus contributes to GHG emissions. More than 600,000 people die every year in India due to bad air quality (source: Embarq India). Policies and measures to reduce air pollution become more and more important for public health.

In Hyderabad, traffic congestion has been an unsolved problem for decades. The modal share of public transport has even decreased between 2001 and 2011, benefiting private vehicle share. Congestion kept rising, and one of the solutions was to implement several flyovers. It would make traffic at crossroads easier. But it did not really work. Nowadays, the city is thinking of implementing paid parking systems. Fees may dissuade people from using their car and generate resources for the local authority.

To fight against air pollution in the city centre, Bordeaux Authorities implemented a car-free zone in the historical centre. With the implementation of a tramway, the historical centre has been cleared off of cars and parking spaces. A significant number of parking lots has been built at the edges of the tramway network, with an attractive ticket price in order to encourage the use of public transport instead of private vehicle to go to the city centre.

Moreover, every first weekend of the month, a larger area is closed to traffic. Only public transports and non-motorized vehicles are allowed in the delimited area. In India, the phenomenon is rising with the Raaghiri Day movement. The objectives of these actions are to change mentalities to make the city more liveable.

Another important issue linking health and transportation concerns obesity. More than 400,000 people die of obesity, making it non-negligible. One of the reasons of overweight is the absence or lack of physical activity. Mobility can be synonym of physical activity when people walk or cycle to get from point A to point B, even if it is just to catch a bus or another public transport facility. The fact that public transport facilities do not run from door to door encourages physical activity. But it is also the reason why people prefer using their private vehicle. Actions to promote walking or cycling must be undertaken by the local authorities. They can be implemented through a sustainable urban planning, by developing bike lanes and pedestrian areas.

Nature inside the city becomes thus an important issue in urban planning and urban strategies. Actually, pedestrian areas are more liveable and comfortable when they
include architectural or natural schemes. The city, even being an artificial construction, rests on the natural layer, and must keep interactions with this original layer. The city of Bordeaux for instance, has a land use strategy oriented towards a balanced preservation between natural areas and build-up areas (50/50). Nature stays in the core centre of Bordeaux, notably along the river where huge gardens have replaced the old car parking bays. Hyderabad has great potential, notably along the Musi River and Hussain Sagar Lake to offer public spaces with pedestrian walkways and cycling facilities.

**Figure 6:** The new transport infrastructure structuring public and natural spaces in the city of Bordeaux

**Figure 7:** Green initiatives along the implementation of the metro network of Hyderabad (Source: HMRL)
III. Economic strategies and transportation

Economic strategies were approached according to their location on the territory. This approach developed during the workshop session allowed linking economy to mobility.

Hyderabad has been identified on three priority sectors for the development of the Indian industry. Information Technology (IT) is highly developed in Hyderabad, software as much as hardware. The IT Investment Region (ITIR) was approved by the Government and is going to be implemented in Hyderabad’s region in order to attract investments in this strategic industrial sector. Biotechnology, Pharmaceutical and Life Science is another sector developed in Hyderabad, especially with industries like Indian Drugs and Pharmaceuticals Limited (IDPL). The third privileged sector of Hyderabad concerns Defense and Aerospace Engineering. Two aerospace parks are planned to be constructed soon, one being near the existing airport in Hakimpet and the other being near Dundigal, in the northern part of the city close to the outer ring road.

It appears that those economic sectors are also the ones developed in Bordeaux. Biotechnologies, software development and aeronautics are important sectors for the French Metropolitan Municipality. The economy of Bordeaux is also greatly centred on vine and tourism industry. These similarities between the two cities will have the opportunity to be further developed along the cooperation programme.

To contribute to the economical attractiveness of those cities, several mobility requirements can be necessary. Hyderabad counts on the necessity of having a fluid transit on the ring road. Indeed, paralyzed traffic can severely affect the economy. The location of the industries is also decisive to keep and increase attractiveness. The strategy of the Indian city is to develop industrial townships near the industrial sites in order to reduce the need for mobility (and therefore avoid possible congestion). The decision of the final locations of these industrial sites will lean on the Master mobility plan. Densification along the MRT corridors will also be included in the Master plan.

In Bordeaux, the growth of the economic sector relies more and more on transportation issues. Intelligent Transport Systems (ITS) contribute to the attractiveness of Bordeaux Metropolitan Municipality by providing a more intelligent, fluid and selected mobility. Moreover, it is a driving sector for the local economy: ITS sector encourages innovation and creation of new businesses (software applications for instance, a sector already privileged in the region). The Intelligent Transport Systems World Congress will be held in October 2015 at Bordeaux.

ITS technology could be used in Hyderabad in order to regenerate all the transit corridors in the city, especially in the centre. Actually, the discussion that followed the two presentations emphasized the possible reorganization of Hyderabad regarding the economic areas and the transportation facilities. During a workshop session, participants have been invited to locate on a map the different economic areas of the Indian city.

Hyderabad is in fact a complex city. Before, Hyderabad and Secunderabad were two twin
separated cities, and the first city centre was Charminar. From the 1960s, the business district moved and nowadays, the historical centre heritage is not highlighted, as people seem looking towards the modern culture that is expanding all around. But the central area could be rejuvenated with the reinvestment of old neighborhoods by the new economy. In Bordeaux for instance, the new economy stakeholders, more collaborative and oriented towards sustainable development, have been deployed on an ancient military site. The old buildings were renovated and include nowadays working spaces, organic restaurant and grocery store, collaborative urban farm, urban playgrounds, and soon an artistic fabric will be added to this multidimensional project. Such clusters of creative economy can appear in the near future of Hyderabad. Tourism development, which is currently underdeveloped, can also be an opportunity to restore the character and the culture of the historical centre.

Furthermore, the development of industries and Central Business Districts (CBD) have been sprawling into the metropolitan area for the last fifteen years. This trend impacts people’s mobility by questioning the acceptable distance between the citizens’ living places and their workplaces, or other services. The question concerns therefore the kind of transport system that will be efficient to respond to the citizens’ mobility needs.

Figure 8: Location of the actual and future economic places: a similar scheme for Hyderabad and Bordeaux
In addition to questioning the strategic locations of the economic sites of the urban agglomeration, the inner reorganization of each neighborhood can be another step towards the development of a sustainable city. The French city has started to implement a concept of neighborhood’s development for and by the inhabitants in order to adjust the scale of living spaces. The concept, imported from Portland, is called the “¼ hour city”. This kind of actions could be implemented in an urban agglomeration like Hyderabad.
IV. Inclusive urban planning and mobility policies

The last session introduced the concept of inclusive urban planning related to mobility policies. It refers to the integration of all modes of transports but especially of all citizens.

Multimodal and intermodal transportation aims to meet the needs of people and to improve accessibility. The concept of multimodal integration refers to integrating various modes (walking, cycling, automobile, public transport, etc.) and connections among modes so that each can fill its optimal role in the overall transport system. It provides an easy access between various public transports, it can reduce accidents by reducing conflicts between the diverse road users, and encourage “park and ride” concept. New transport systems should include the concept of multimodality and intermodality. An example of the development of a multimodal station of Chennai Metro was presented during the session. Alandur station is being designed in a multimodal way by improving its pedestrian access and infrastructures (footpaths, access to the diverse transport modes, landscape including nature, promenade, etc.).

The implementation of a multimodal station is necessarily influenced by the policies related to mobility. If the priority is given to cars, multimodality integration will be very poor. On the opposite, when priority is given to pedestrians, the mobility system can become sustainable and comfortable for everyone (user friendly, environment friendly, economy friendly). The value scale in priority changes to give more importance to the most fragile, the slowest, the less expensive and the less polluting.

Figure 9: The value scale in priority changes to give more importance to the most fragile, the slowest, the less expensive and the less polluting.

To implement a sustainable mobility system, the existence of a Metropolitan Transport Authority, with the powers related to urban planning, transport and mobility and which benefits from specific financial resources (taxes levied locally, ...) is a favourable tool. A Transport Authority can orientate the decision making process towards the change of value scale hierarchy and can give priority to pedestrian and multimodality.
Others actions must be taken to develop an integrated approach in public transportation:

- Fare policies are important in the integration process: making transport services affordable to everyone is necessary to provide an integrated service;
- Public transports should serve the entire territory, and not only specific areas;
- Safety is also an important point to consider when establishing transport policies;
- Last but not least, universal accessibility must be provided inside every public transport facility.

The discussion that followed the presentations on inclusive planning focused on the solutions that could be easily implemented to take better care of all the citizens in the transportation system of Hyderabad. The emphasis was on the accessibility supply for four categories: disabled people, children and elderly, women, and low-income people.

To provide better accessibility to disabled people, the idea of dedicated vehicles, and dedicated facilities inside the wagons were suggested. Elevators should be comfortable to enable access to wheel chairs along with other people for instance. The idea to stop implementing footbridges was also proposed.

Children and elderly people should have appropriate accessibility to mobility while ensuring their safety. Transport systems should be comfortable as well as convenient.

For women safety, the question was rather to make the gender difference or not. It appears that separate compartments (for ladies and gents) do not necessarily ensure safety. A change in social behaviors is necessary. Another issue addressed was that crowded places are more comfortable for women than empty streets. Making public spaces pleasant is important to integrate everybody.

Concerning the improvement of transport accessibility to low incomes, the idea was to provide low income housing in the city centre, close to all facilities. Household expenses for mobility will then be reduced.

Figure 10: Word cloud from the post-it notes of the workshop session #4: “How to welcome all citizens in the transportation system of Hyderabad?”
Conclusion: key points of the workshop and issues to deepen

The seminar ended with a wrap up session where several key points were reminded.

Even if they are at different stages, the two cities are on the way to foster sustainable development thanks to their transportation policies and strategies. The objectives in favour of public transports, pedestrians and cyclists have to be achieved and strengthen. Development of intermodality and multimodality, integration of transport infrastructures together with urban planning, preservation/implementation of nature and public places in the city are necessary actions to be included in the urban strategies towards a sustainable metropolitan area.

But, to choose the solution the most adapted to the territory, the decision making process has to incorporate citizens’ opinion. Because those choices are made to improve the comfort of life of the population, they have to be done with the people. Participation is part of the transition towards a sustainable urban planning. Incorporation of citizens’ participation in the process of urban planning policies and mobility policies can help to make mentalities and habits change. The concept of the “¼ hour city” developed in Bordeaux helps to promote a new practice of urban areas directly with people who live there. This type of actions can be implemented in Hyderabad as well.

Others points were broached during this seminar, and could be discussed in the meetings to come. Hyderabad has a great potential to maintain or develop corridors of biodiversity, especially with the lake and along the river. Those natural elements are structuring and could be articulated along other structuring facilities, such as public transport networks. Such integration of nature inside the city is important to preserve or restore an environmental quality.

Preservation and renewal of the architectural and cultural heritage was also underlined. Revitalization of the historical centre can be a significant action to boost the economy inside the ring road of Hyderabad. The new economy, as IT development, can reinvest some abandoned-like places, as Bordeaux did by developing a cluster of green and creative economy on ancient military lands.

Developing specific projects along specific territories is not an easy task to be done. Dedicated tools must be implemented to make urban planning and transport policies effective. A holistic approach is necessary to create an integrated urban project. The Metropolitan Authority of Bordeaux would like to share its experience on the method and concrete tools that were used to renew the city centre and to connect it with the entire metropolitan area.

To pursue the city-to-city cooperation, a second meeting should be held in Bordeaux in spring 2015 (probably in May 2015) and should emphasize on the most important issues. This visit in Bordeaux will be the opportunity to discover how concretely the urban planning tools have been set up in the city, how the French urban planning integrates public transportation in the urban landscape, how the use of private vehicles is restrained in favour of public transports, pedestrians and bicycles. It will be the
occasion to continue the discussions, the know-how transfer and the experience sharing on transport planning and its articulation to the global strategies of a metropolitan area. The institutional question, which was not approached during the seminar, can be developed in the second workshop as one of the main themes. A presentation on concrete tools for urban planning linked to public transportation can constitute another theme. A technical visit of the central places of Bordeaux would help to understand the French idea of an integrated city.