UMI 10-CODATU XVII CONFERENCE
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1 – Inaugural Session
04/11 12:00-13:20

Speakers:

Durga Shanker MISHRA, Minister (Urban Development), Ministry of Housing and Urban Affairs (MoHUA), Government of India
Dominique BUSSEREAU, President of CODATU
Alexandre ZIEGLER, French Ambassador to India
Elizabeth BORNE (video), French Transport Minister, Ministry for an Ecological and Solidary Transition
Hardeep Singh PURI, Minister of Housing and Urban Affairs, Government of India
VenkaiahNAIDU, Vice-President of India

These minutes were written by Claire D’Arco and Thomas Bourdin
D. S. MISHRA: The conference has brought together 1,000 delegates, 25% of them from abroad, and its objective is to exchange knowledge and practices concerning the world’s various cities, in a context where Indian cities are booming.

D. BUSSEREAU: In terms of sustainable urban development, the cities of the North and the South must join together and cooperate so that they can learn from their respective successes as well as their failures. That is the purpose of the CODATU conference.

A. ZIEGLER: Cities produce 80% of greenhouse gas emissions (GHG) and 25% of those emissions come from transport. Urban transport is, therefore, crucial to achieving sustainable urban development. Indian cities need a large range of transport solutions, and French companies have been making active commitments to the country for many years, investing in a number of metro projects.

E. BORNE: The acceleration of urbanisation and climate change is bringing new challenges. These challenges have to be met if cities are to become more sustainable, more resilient and more inclusive. India and France are partners; in particular for actions requiring technical cooperation such as Lyon and Kochi.

H. S. PURI: Demand for mobility is growing in India. A range of public transport must be developed in order to ensure that needs are not met only by private vehicles (motorbikes and cars). The idea is to transport people and not their vehicles. As Gandhi said: ‘The world has enough for everyone’s need, but not enough for everyone’s greed’.

V. NAIDU: In the context of global urbanisation, Indian cities must play a more active role than ever in exchanging ideas with the rest of the world: ‘We have to learn and then we earn’. Public transport seems indispensable for overcoming these challenges. No other option can meet all mobility, inclusivity and public health objectives. However, habits and ways of thinking must be changed first. In this way, a Smart City is not just about technology, but rather a city where people are happy and have real quality of life.

Summary: In the current context of global urban growth and climate change, there is a clear need for sustainable cities. As a result, transport has a crucial role to play because it represents 25% of all GHG emissions.

Given that 80% of urban growth will occur in developing countries, we must urgently strengthen cooperation between states and cities from ‘the North’ and ‘the South’ so that we can learn from each other’s successes and failures.

The aim of this UMI-CODATU conference is to facilitate an international dialogue and exchange of ideas by bringing together a thousand participants.

In India, public transport is an even more vital issue because, according to studies, 90% of its demographic growth is occurring in cities. The use of private vehicles (cars or motorcycles) is becoming increasingly widespread, creating many problems for cities, such as uncontrolled urban sprawl, congestion, urban fracture, inequality, road safety, pollution and public health issues.

Public authorities work in partnership with the private sector to provide a public transport that is accessible, inclusive, multimodal, high quality and adapted to the needs of residents.

At the same time, a paradigm shift in individuals’ habits is needed to ensure that everyone uses public transport. In his speech, the Indian Vice-President cited Enrique Penalosa, former mayor of Bogota, who encapsulated this idea when he said: ‘A developed country is not a place where the poor have the cars. It’s a place where the rich use public transport.’

Key words: International, Exchanges, Cooperation, Sustainable urban development, Experience, GHG, Sustainable transport, French companies, Challenges, climate change, Smart City, Paris Agreement, Public transport, Inclusive mobility
Chair:
Brijesh DIXIT – Managing Director, Maha Metro Rail Corporation Ltd

Speakers:
Pierre SERNE – President of the Club des villes et territoires cyclables (club of cycle cities and territories)
Laurent SENIGOUT - Managing Director, Keolis Rennes
Pawan KUMAR – Town and Country Planning Organization
Murali KRISHNA - Special officer at Directorate of Urban Land Transport (DULT), Government of Karnataka;
Jean-Baptiste GERNET, Deputy Mayor of Strasbourg in charge of alternative mobilities, and Counsellor at the Eurometropolis of Strasbourg;

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2 These minutes were written by Maud Berthelot and Simon Desmares
P. SERNE: The challenge is to reduce cars’ modal share. To achieve it, active transportation must be coordinated with public transport. However different modes of active transportation must themselves also be combined. Inclusive mobility involves meeting the new challenge of encouraging cycling for centre-periphery travel and not just centre-centre travel.

L. SENIGOUT: Keolis, the transport network operator in Rennes, bases its services on door-to-door travel rather than on station-to-station journeys undertaken on public transport. Rennes is an archipelago city consisting of a centre surrounded by a green belt and small communes. The current bicycle service is not very inclusive because of the lack of road safety for cyclists. 60 km of separated cycleways have been planned. Inclusive mobility must also be based on affordability, and the mixed metro-bicycle-bus-train student pass is a good example of this.

Dr Pawan KUMAR: Mobility in low-income residential areas is often reduced to mandatory travel (for work, health, and education). Mobility in these areas often suffers from inefficient transport in terms of availability, affordability and frequency, which results in fewer but longer journeys.

Murali KRISHNA: Mr Krishna presented the transport policy for Mysuru, a city in Karnataka, where he helped to implement a system of self-service bicycles. An impact study demonstrated that users were satisfied with the service (30% of the self-service system’s usage used to be reliant on motorised transport).

J-B GERNET: In Strasbourg, cycling’s modal share is the highest in France (8% compared with an average of about 1.5% in the rest of the country). The promotion of cycling relies on three levers: road safety, easy parking, and bicycle culture. Bicycle use is nevertheless much more developed in the centre (14% of modal share) than the periphery (5 to 7%). Furthermore, the number of users has stagnated (50%), which implies that the city is unable to attract a proportion of the population. To remedy this, the city is organising training sessions and launching campaigns underlining cycling’s positive health effects.

Summary: The theme for session 1 in Hall 2 was how to plan mobility in an inclusive way to serve everyone and six Indian and French speakers were invited to speak on the topic. Inclusive mobility means combining active transportation and public transport (which is likely to be achieved), but it also has to encompass all travel by all residents wherever they live, which remains an issue in both France and India. Unfortunately, although the title provided for a broader scope of reflection, the session tackled inclusivity solely from the angle of sustainable transportation. Furthermore, there are many pedestrians in France, and this area of mobility could have been addressed further to present the French policy of pedestrianisation and road-sharing to the audience.

Key words: Modal share, Commuter mobility, Door-to-door mobility, Accessibility, Urban poor, Income poor, Accessible poor, Time poor, Vulnerable poor, Relocation, Affordability, Availability, Public Bicycle Sharing, Daily rides, Off-peak, Intelligent Transport Management System, Docking details, Cycle schools, Active mobility, Prescribed sport for improved health, E-bike, Cargo bike, Bicycle highways
Chair:

Sudhir KRISHNA, Former Secretary (Urban Development), Government of India

Speakers:

Shashi SHEKHAR, Retd. Secretary, Ministry of Environment, Government of India
Arun VINAYAK, Chief Business Officer, Ather Energy
Subash DHAR, Senior Economist, UNEP DTU Partnership, Copenhagen
Jean-Michel GENESTIER, Deputy General Manager, SNCF Logistics

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3 The minutes were written by Doriane Jacq and Chloé Mecqinion
A. VINAYAK: Ather Energy, is currently developing a two-wheeled electric vehicle range for India.

S. DHAR: In order to support a transition to the use of electric vehicles, Indian authorities must begin to consider the strategic positioning of charging points.

J-M GENESTIER: In developing countries, railway lines must be reorganised to improve freight efficiency.

P. GOYAL: The Kochi metro regards itself as an integrated transport network and therefore positions itself as a provider of transport solutions (river shuttle) and not as a simple operator.

Summary: It has been shown that modes of transport reliant on combustion engines have a detrimental effect on the environment and public health, so the speakers unanimously called for action to promote cleaner mobility solutions. The three speakers went on to highlight that coordination is indispensable for transitioning to electric transport:

- Mr Arun Vinayak is a representative of Ather Energy, which is currently developing a two-wheeled electric vehicle range for India. He presented a ‘zero compromise system’, with the ambitious and radical goal of creating a new fleet of individual vehicles ‘from scratch: clean, connected and smart.’

- Mr Subash Dhar, an economist at UNEP, is leading a study on the existence and perception of electric vehicles in Hyderabad. He stated that the modal share of private vehicles (mainly two-wheelers) had reached 70%. According to a study, most of the city’s inhabitants would not object to the idea of spending some time recharging an electric vehicle. In order to support the transition, public authorities should adopt a policy on charging point locations. New Transit Oriented Development (TOD) strategies could be devised for these charging points so as to create a new social space.

- Mr J-M Genestier, Deputy General Director of SNCF Logistics highlighted the fact that, contrary to popular opinion, electric transportation has a long history pointing out that it was invented in 1834 in Paris. His speech focused on the transport of goods. The revalorisation and reorganisation of railway lines in developing countries constitutes a first step towards more efficient freight transport. Electric vehicles could represent the remainder of the solution if used to cover short freight transport. Electric vehicles could represent the remainder of the solution if used to cover short distances, thus solving the problem of the ‘last mile’.

Conclusion: The transition from combustion engine to electric transportation must remain coherent concerning the energy’s origins, which might be nuclear or renewable.

Key words: Last mile, Freight, Zero compromise system, Clean, Charging points as social spaces
Chair:

Pedro ORTIZ, Urban planner, consultant

Speakers:

Annie GUILLEMOT, former President of SYTRAL and French Senator
Eric DISERBEAU, Director of Mobility and Transport, Rennes Metropole
Amit BHATT, Strategy Director, Integrated Transport Department, World Resource Institute (WRI)
Praveen GOYAL, Technical Director, SYSTRA

These minutes were written by François Lecailliez and Amandine Truong
A. GUILLEMOT: Lyon’s transport network is second only to Paris in France in terms of performance because it is multimodal and adapted to different levels within the city.

E. DISERBEAU: The Rennes Metropolitan area is highly specific because there is low population density outside the city-centre and the city has to adapt transport services to match this feature. The main mobility problem in Rennes is congestion linked to commuter traffic, so the next Urban Development Plan is considering off-network solutions such as car-sharing, telecommuting, and flexible working hours.

A. BHATT: All actors of a society, especially entrepreneurs, should be involved in overcoming transport challenges. In India, mobile applications have only developed solutions targeting cars, which represent just 10% of users in the country. Workshops have been organised to compensate for this paradox to take advantage of the notion of the ‘last mile’ with solutions such as car-sharing, two-wheeler rental, and rickshaw reservations etc.

P. GOYAL: The Kochi metro regards itself as an integrated transport network and therefore positions itself as a provider of transport solutions (river shuttle) and not a simple operator.

Summary: French case studies show that the form, topography and population distribution of a city need to be taken into account when organising transport systems. Transport provision must be adapted to the needs and to the demand, in line with population density in the city centre and periphery.

Annie Guillemot proposed that forecasting work be done to adapt to changes in demand. This work would require dense settlement areas and urban planning around main transport axes to be considered, making it crucial for a local authority to be involved to coordinate the transport network.

The major priority for cities is clearly a multimodal and intermodal transport system that provides access to the broadest possible range of transport and ensures practical and optimised connections between the different modes of transport. A ‘Smart Card’ or chip card is another way of simplifying movement around a city in an intermodal context.

Lastly, getting the local population involved, from businesses to local residents, is crucial if an appropriate urban transport network is to be planned and developed.

Key words: Public Transport Authority, Intermodality, Multimodality, Unique ticketing system, Congestion, Urban Mobility Plans, Workshops, Mobile applications, Last-mile connectivity, Integrated network, Metro, Maritime transport.
5 - Governance, Urban Planning and Mobility
04/11 14:30- 16:00

Chairs:
M. RAMACHANDRAN, Former Secretary, Indian Government
Christian CURE, Director, CEREMA

Speakers:
Françoise ROSSIGNOL, Elected representative, GART
V. RAVICHANDAR, City Connect
Anne RAIMAT, In charge of International relations, Bordeaux Metropolis
R. K. PRASAD, Professor, NIT Warangal

5 These minutes were written by Lucie Brisoux and Anaïs Marcel Delarocque
F. ROSSIGNOL: In France, the jurisdiction of communal and regional public authorities has been extended and they now manage mobility and transport.

V. RAVICHANDAR: The ‘Tender SURE’ project is a bottom-up process that has transformed mobility practices in Bangalore.

A. RAIMAT: The construction of Bordeaux’s tramway enabled the urban space and its usages to be transformed and re-energised.

R. K. PRASAD: Defining a long-term mobility master plan is essential to the development of the Hyderabad metropolitan area.

Summary: This session aimed to define the most relevant level of governance for resolving urban problems. Strong political resolution has resulted in the jurisdiction of local authorities in France being enlarged, and they now largely decide transport policy. The close involvement of Alain Juppé in the construction of Bordeaux’ tramway is a good example of this. The project was facilitated by extending the scope of the jurisdiction delegated to local authorities and cities and by creating a ‘Mission Tram’ department within the local authority with the aim of ensuring the successful completion of the project. The Indian model is more reliant on a broad range of initiatives originating from both the public authorities and civil society. Bottom-up initiatives, such as the Tender SURE project for the promotion of pedestrian safety in the city, which was implemented in Bangalore in 2007, have changed mobility practices considerably. Indian local authorities have also played a role in defining mobility policies. Hyderabad city, for example, has developed a transport master plan, making it the first city in India to have a plan specifically dedicated to mobility.

During this session, it was, therefore possible to compare two models for governance along with the problems specific to each country. In India, local authorities lack jurisdiction and find it difficult to define integrated urban policies due to the lack of coordination between different actors. On the other hand, transport in France is mainly managed by public authorities, which can be a source of limitations due to a rigid and demanding legislative environment, and funding difficulties.

Key words: Governance, Urban sprawl, Public Transport Authority, Bottom-Up initiatives, Urban rehabilitation, Political leadership, Sustainable mobility, Integrated systems
Chair:
**P. K. BANSAL**, Managing Director, Chennai Metro Rail Corporation

Speakers:
- **Om Prakash AGARWAL**, CEO, WRI India
- **Ali HUZAYYIN**, 1st Vice-President, CODATU
- **Michel LARAMEE**, Treasurer, *CODATU*
- **Xavier CREPIN**, Project Manager, Ministry of Foreign affairs and International Development

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6 Ce compte-rendu a été rédigé par Marine Adrion et Pierre Elgorriaga
O. P. AGARWAL: Mr Agarwal talked about the eight mobility revolutions he believes are occurring throughout the world: the diversification of modes of transport; the cleanliness of the journey, rather than the vehicle; a shift to electric vehicles; public-private partnerships; demand management; transport systems funded by the beneficiaries rather than just by users; a global approach to the issue - broader than a sector approach; and the arrival of smart systems.

A. HUZAYYIN: Mr Huzayyin gave an overview of the 20 years that have elapsed since the CODATU VII conference in Delhi in 1996. Its theme was ‘A paradigm shift and sustainable mobility, is it possible, and if yes, how?’ The question is still relevant after 20 years of work on the subject, raising questions about the future of mobility.

M. LARAMEE: Mobility in the 21st century has gone through 3 revolutions: urban, energy, and digital. Today’s challenge is to identify and limit the risks of these factors and to seize the opportunities they create.

X. CREPIN: The challenges faced by tomorrow’s mobility rely on 3 levers:
- Creating partnerships between different international actors
- Sharing knowledge and training actors
- Taking action through public policy.

Summary: A profound revolution in mobility is taking place to deal with climate change and the demographic boom in developing countries.

At the same time, the advent of digital technology is fundamentally transforming the mobility sector and providing new tools for dealing with issues linked to urbanisation.

However, for more than twenty years, urban spaces have been dealing with the issues of air pollution, congestion, the exclusive nature of mobility and an explosion in demand. Not all of these issues have been overcome to date.

So, can we really adopt the same paradigm, use the same model that has been in place for many years and was created for very different contexts. Two main areas of thought emerged:

- It seems appropriate to examine developed and developing countries separately in order to find an efficient solution for travel needs in each.
- The recognition and integration of informal transport could be a central element in co-constructing the mobility of the future.

Key words: Multimodality, Transit Oriented Development, Public Private partnership, Sustainability, Urban revolution, Digital revolution, Energy revolution, International conferences, Sustainable Development Goals (SDG), International cooperation
Chair:
P.B. ORTIZ, Urban Planner, Multilateral and Government consultant

Speakers:
Frederic BAVEREZ, CEO, KEOLIS
Jean-Baptiste GERNET, Deputy Mayor of Strasbourg (France)
Salish KUMAR, Director Smart Cities, MoHUA, Government of India
K. KAMAR, Municipal councillor, Pune, India
P. B. ORTIZ, Urban Planner, Multilateral and Government consultant

The minutes were written by Marine Adrion and Chloé Mecqinion
**F. BAVEREZ:** Technology must serve citizens’ by optimising urban mobility.

**J-B Gernet:** Digital technology can be used to understand areas in a different way and to facilitate changes in mobility behaviours thanks to new ‘mental maps’. In order for this to happen, it is important to be aware that each journey’s distance, linked to a specific use, corresponds to a different mode of transport.

**S. KUMAR:** Smart Cities should be able to reduce the gap between infrastructures and the services provided. Mobility is a significant lever for a Smart City (Smart City budgets dedicate 20% of their investments to transport).

**K. KAMAR:** The coordination of public policy, building of infrastructures and digital support are all necessary if we are to meet our citizens’ primary need: mobility. Transport providers’ need greater capabilities in order to create effective changes in mobility at a local level.

**P. B. ORTIZ:** The city should be seen as an appropriate matrix for reaping all the benefits of a ‘Smart City’.

**Summary:** As digital technology has been introduced into the city, a field of almost infinite possibilities has opened up in terms of mobility. To what extent might new technologies solve all of our cities’ problems? All the speakers agreed that citizens should be put at the heart of the digital revolution in mobility.

By analysing the data, professionals working in the transport and mobility field can provide solutions tailored to demand, thus improving the user experience. For example, digital applications recommend the ‘appropriate’ means of transport for each journey (cycling short distances optimises time and transport costs). All of these innovations tend to optimise citizen’s services and reduce the environmental footprint.

However, smart mobility must be inclusive if it is to be effective. This, therefore, raises two issues: first, the ‘disconnected’ who have no access to smartphones and second, the resistance to change from certain actors (surveillance versus protection): ‘Technology can be a devoted servant, but it can also be a dangerous master’ (Salish Kumar).

The tailored transport ecosystem should be an integral part of the denser metropolitan framework, to make it into ‘shared’ mobility that meets environmental needs. Implementing a mobility network model would also have a positive impact on economic efficiency and social justice.

**Key words:** ‘Smartphone as a Swiss knife of travellers’, Mobility as a choice, Mobility as a service (Maas), Free floating, Mental map, Pertinent mode of transport, Local leadership, Citizen empowerment, Infrastructures, Public policies, Technologies, Metropolitan areas, Density and efficiency vs. Distribution et equity, network vs. “hub and spokes” polycentrism models.
Chair: Indrajeet Prasad GAUTAM, Managing Director, Ahmedabad Gandhinagar Metro (MEGA)

Speakers:
Vinay Kumar SINGH, Managing Director, National Capital Region Transport Corporation (NCRTC)
SURESH CHETTIAR, Chief Operating Officer, Volvo Buses – South Asia
MP GROUP (Sponsored Session)
Somarapu SATYANARAYANA, Chairperson, Telangana State Road Transport Corporation

8 These minutes were written by Thomas Bourdin and Théo Serre
V. K. SINGH: The RTS (Rail Transit System) is the quickest public transport system, with the highest frequency and greatest capacity, however, it is also the most expensive. For this reason, it is important for the government to be involved in project funding, in providing guarantees and reducing risks. Financial instruments, especially land value capture, can be used for this purpose.

S. CHETTIAR: Decision-makers often opt for tramway or metro projects, however, the BRT (Bus Rapid Transit) is much more competitive in terms of cost. For investments of 1 billion euros in India, we can build 15 km of metro lines, 60 km of tram lines or 200 km of BRT lines. A paradigm shift is, therefore, needed. In order to change mentalities, BRT should offer high-quality equipment and facilities to suit different travel needs to ensure that it is an attractive option.

NOIDA - MP Group: The success of this type of service relies on three key criteria:
- Affordability
- Practicality
- Punctuality

This approach can be summed up as follows: ‘The passenger should not wait for the bus, but the bus should wait for the passenger.’

S. SATYANARAYANA: Demographic growth in India has led to the growth of villages and medium-sized cities, leading to greater journey distances for their populations. Local development is essential if we want to maintain territorial balance. Local projects should be implemented simultaneously with the connection of these areas to large cities and their infrastructures.

Summary: The comparison of various projects has made it clear that a certain number of principles must be adhered to if public transport is to successfully play a central role in the development of cities. First, a long-term vision should be taken and public authorities should be very involved, primarily in funding projects. Second, infrastructure should be created on an appropriate scale in order to meet the needs of the population while also ensuring economic viability. Finally, public transport should be attractive, meaning it should be affordable and provide high quality equipment, facilities and services.

Key words: RTS, Public authorities, Land Value Capture, BRT, Attractiveness, Competitiveness, Quality of service, Inclusivity, Local, Rural-urban, Connection
Chair: Abhay MISHRA, Managing Director, Mumbai Metro One Pvt. Ltd.

Speakers:
T. CHIRANJEEVULU, Metropolitan Commissioner, HDMA, Hyderabad
Shivanand SWAMY, Executive Director, CEPT University, Ahmedabad
Jaya DHINDAW, Strategy manager, WRI
S. K. LOHIA, Managing Director, Indian Railway Station Development Corporation (IRSDC)

These minutes were written by Claire D’Arco
T. CHIRANJEEVULU: Land value capture within the framework of TOD, is based on the idea that land and private buildings benefit from public investment in transport infrastructures via rises in property values. Thus, it should be possible for the State to ‘capture’ some of the increases in land value to fund the project’s maintenance or to fund other projects in the public interest. Transport projects developed today should pay for future development.

S. SWAMY: It is essential for urban land-use planning to be continually updated. At a local level, a Town Planning Scheme (TPS) that promotes territorial coherence enables public authorities to set aside strategic land, which has seen its value enhanced by transit-oriented development (TOD), for public infrastructure, social housing and public spaces, while a small proportion of it can be sold to fund projects (land bank).

J. DHINDAW: Medium-sized cities with fewer public resources are going to experience the quickest and strongest growth. TOD is the right model as it facilitates the creation of walkable cities with mixed land usage. Some Asian cities such as Hong-Kong have succeeded in linking high density and limited transport needs. Different funding models are possible, depending on contexts and national legislation.

S. K. LOHIA: For developing railway stations, the public-private partnership model is the most beneficial. This financial model puts a very high price on parking spaces in order to limit demand despite the rising number of vehicle owners. There must be developmental cooperation between agencies at different levels: local, state and central government.

Summary: The session brought together private actors, scientists and Indian public authorities involved in the field of mobility and urban planning. A major theme was how public authorities can tap into land value in a context of limited financial resources, i.e. land value capture. The speakers proposed different means for accessing the value of the land adjoining transport corridors, such as land-sharing, a land tax, and re-selling strategic land at elevated prices etc. The land surrounding transport projects (stations and corridors) is a key issue. Should the land be sold, or heavily taxed to bring in cash to help develop other metropolitan transport projects, as recommended by Chiranjeevulu, or should a maximum of 15% of the ‘land bank’ be reserved to fund infrastructure projects and the rest allocated to public projects for mixed land use as recommended by professor Swamy?

The speakers all highlighted the importance of linking urban development with transport development according to the principles of Transport Oriented Development (TOD). To achieve this, they all emphasised the crucial role of inter-agency cooperation. The idea behind TOD is also to limit travel needs. Lastly, Mr Swamy and Mr Lohia explained that TOD necessarily requires the ‘re-development’ and re-densification of areas around existing strategic points.

Key words: Business model, Public investment, Policy decision, TOD, TPS: Town Planning Scheme (local scale), land bank, Re-development, New urban paradigm, Compact city, Compact city, Public-Private Partnership, Inter-agency collaboration, Parking fees
10 - Design, funding and implementation of a Tram System
05/11 11:30-13:00

Chairs:
Anne RAIMAT, In charge of International relations, Bordeaux Métropole
Etienne LHOMET, Transport expert, CODATU / DVHD

Speakers:
Geraldine DI MATTEO, Deputy Director of the Multimodality department, Bordeaux Metropolitan Area
Navin MITTAL, Secretary (Urban Development), Government of Telangana
Vincent LICHÉRE, Director Urban Mobility, Suez Consulting
G. P. HARI, Additional General Manager (Urban Transport), Kochi Metro Rail Limited (KMRL)
Frederic BAVAREZ, Executive Director, Keolis
Xavier GIRAUD, Engineer, EGIS Rail

10 These minutes were written by Lucie Brisoux and Anais Marcel Delarocque
G. DI MATTEO: Bordeaux and Hyderabad face the same problems of congestion and pollution. When defining transport policies, a global approach is required.

N. MITTAL: Hyderabad is currently creating a new mobility strategy, including a Transport Plan that should allow a solution for the growing population and its needs.

V. LICHERE: Transport projects are long-term initiatives and sometimes fail. The key to success is designing transport systems that go beyond simple infrastructure: each tram system should be adapted to its city and inhabitants.

G. P. HARI: The Kochi metro is a success; however, it cannot solve all the city’s mobility problems by itself. As a result, the city is now considering creating a tramway to complete the network.

F. BAVEREZ: Various factors favour the success of tramway projects in developing countries. The challenge for cities is to decide whether a tramway is the solution to their mobility problems, or whether another system would be more appropriate.

X. GIRAUD: Egis is carrying out a research programme on ‘new generation’ tram systems, designed to be quicker and carry more users.

Summary: How can an efficient tram system be integrated into a city? One factor highlighted was the need for long-term political resolution and support for the project. A single institutional change or obstacle can be enough to make the project fail.

The creation of a new generation tram system actually modifies the configuration of the existing urban space. As a result, the mobility practices of the population and the current and future uses of that space all have to be taken into account. In this way, the construction of a tramway in developing cities provides two opportunities: first, the potential for renovating and creating public spaces, and second, it may provide a good means for linking the City’s different transport networks.

However, these cities face different issues to those faced in Europe, so each tram system should be designed to adapt to each city’s features and specificities. However, the choice of system must be made according to the real needs of the city and its inhabitants.

Key words: Global approach to mobility, Long term strategy, Urban integration, High capacity, Research, Choice
11 – Challenges of Developing Mass Transit System in Developing Countries

05/11 11:30-13:00

Speakers:

Rajeev MALAGI, Project Manager, WRI
Mathieu VERDURE, Transport project manager, French Agency for Development (AFD)
Marion HOYEZ, Project manager, CODATU

These minutes were written by François Lecailliez and Amandine Truong
R. MALAGI: From now until 2030, India is going to face massive challenges linked to urbanisation: a rising population and resultant growth in car sales coupled with increasing urban sprawl. One of the solutions to these challenges is Transit Oriented Development (TOD) which takes a project-based approach to urban development. TOD creates hubs of urban density around transport stations. To achieve optimal efficiency, TOD should cater for safe access to the station, multimodal integration and a programme for improving the surrounding buildings.

M. VERDURE, M. HOYEZ: As a means of transport, the metro alone cannot provide a solution to all mobility issues. Transport needs to be envisaged in a global way and not simply via one mode (tram, metro, or BRT).

Workshop lead by the WRI: The Kochi metro is an example of fruitful cooperation based on the 5 following pillars: inspiration, integration, innovation, communication and cooperation.
The workshop aimed to tackle the issue of mobility with all the stakeholders concerned. Each participant played a different role (drawn by lot): the government, a private company, a teenager on a bicycle, a grandfather, a car-owner and a person with reduced mobility.
A mobility issue from daily life was then also drawn by lot and several strategic solutions were proposed. The aim of the workshop was for the stakeholders to debate the issue and ensure that the solution adopted satisfied the greatest number.

Summary: Developing countries are facing immense challenges, notably in terms of urban transport. There are many solutions available to meet these challenges, for example, a TOD policy that guarantees a station’s accessibility while integrating a multimodal hub to ensure its success. However, real-life examples, such as the Kochi metro, also demonstrate successful cooperation, primarily because the metro operator went beyond the narrow definition of its role and became a veritable transport solution provider.
To sum up, the workshop emphasised that any project aiming to improve mobility should meet and create a dialogue with all the stakeholders concerned, even if their interests may initially seem contradictory. This is one of the paths towards more inclusive mobility.

Key words: TOD, Intermodal integration, Intermodality, Cooperation, Inclusive Mobility;
Maintaining equity in urban transport in developing countries – Issues and challenges
05/11 11:30–13:00

Speakers:
M. MANOJL, Doctor, Assistant professor, IIT Delhi
Tarun RAMBHA, Doctor, Assistant professor, IISc Bangalore
Rahul T. M., Doctor, Assistant Professor, Amrita University, Coimbatore
Ashish VERMA, Professor, IISc Bangalore

These minutes were written by Aisi Chang and Pierre Elgorriaga
M. MANOJ: Studies were carried out on the transport habits of economically inactive people according to income. The results show that income is a variable that influences daily mobility practices.

T. RAMBHA: City-centre vehicle tax is introduced to combat congestion and air pollution. The major issue related to this measure is how the funds collected by the authorities can be redistributed to develop public transport and maintain infrastructures, thus avoiding the negative impacts of a high level of social exclusion.

RAHUL T. M.: In India, a high level of social pressure prevents a great number of women from cycling. In response to this, we need to convince people that the bicycle is of strategic environmental concern, develop dedicated spaces and accept that cycling must be accessible to all men and women.

A. VERMA: Infrastructures need to be developed, roads need to be lit and habits changed to guarantee women’s safety on public transport. Women’s lack of safety threatens the use of public transportation because women represent half of all users.

Summary: In response to the equality theme, issues of income inequality and gender were highlighted.

Key words: Time value, Accessibility, Congestion pricing, Social inequality, Urban toll, Pro-bicycle policies, Social pressure, Environment, Insecurity, Well-lit stations, Fear, Public Transport, Women
Chair:
Guy LEBRAS, Director of GART (Group of Public Transport Authorities)

Speakers:
Jean-Baptiste GERNET, Deputy Mayor of Strasbourg in charge of urban mobility
Benjamin FAUCHIER-DELVIGNE, Asia Sales manager, POMA
Paul GARDEY DE SOOS, Managing Director, Metro One Operation, RATP Dev Transdev Asia (RDTA)
Timothee MANGEART, In charge of commercial development, Artelia City & Transport

13 These minutes were written by Maud Berthelot and Simon Desmares
J-B GERNET: Strasbourg’s decision to provide a tramway in the 2000s was not merely a technical mobility choice; it was part of an urban development project that aimed to change the face of the city. The tramway meant that public space could be reorganised to promote active transportation (walking and cycling). The aim was to eliminate the use of cars to cross from one side of the city to the other. The project also serves urban development, i.e. it facilitates the urbanisation of less dense areas.

B. FAUCHIER-DELAVIDNE: The Medellin cable car was an overall success (technically as well as economically, socially and environmentally), demonstrating that cable transport is a low-cost and judicious choice when land is scarce. As a method of transport, it is also passive because it does not need breaks or signage. Nevertheless, it should not aim to replace other modes of transport but to complement them.

P. GARDEY DE SOOS: Four aspects underpin the commissioning of Mumbai’s metro line: a culture of safety which has led to preventative maintenance; an ecologically sustainable system; a competent local authority, which makes the system tenable; and a viable economic equation. A transport network’s operator and maintenance manager must guarantee the project’s economic viability without allowing it to impact operational excellence and the sustainability requirements, just as RTDA did.

T. MANGEART: The project was devised in close collaboration with the authorities with the aim of galvanising the centre. The Santiago City simulator comprises three stages: the first stage aims to understand the city’s issues; the second aims to put forward a strategy to resolve those issues; and the third aims to advance solutions for the city by promoting internationally-applicable French solutions.

Summary: Is French experience of sustainable development applicable in other countries? This question provided the common theme for the session. To answer this question, five French mobility experts from the private and public sectors shared their experiences. Mobility policy in France is based on effective research on road-sharing between public transport, active transportation and automobile traffic. In general, French cities tend to reduce cars’ modal share in order to increase the active transportation’s modal share. Furthermore, mobility becomes inclusive when it is part of an urban development plan and not just a technical mobility choice. To achieve this, transportation must be designed for all aspects of society. Lastly, French actors have successfully developed technology (software, infrastructures etc.) that provides a better understanding of the city so that it can be organised intelligently. France now needs to export its skills as well as its ability to adapt to different environments primarily thanks to the diversity of proposed solutions. It is for this reason the various speakers came here to present their work: because, once adapted, it may be applicable to Indian cities.

Key words: urban renewal, transit traffic, island, functional mixing, corridor, physical integration, acceptability, operator, maintenance, 3D simulator, data management.
14 - Implementation models for adopting ITS in Public Transport
05/11 11:30- 13:00

Chair: SUTP

Speakers:
G. P. HARI, Additional General Manager, Kochi Metro Rail Limited (KMRL)
Tukaram MUNDHE, General Director, Pune Mahanagar Parivahan Mahamandal Limited (PMPML)
Yatindra NAIK, e-governance manager, Ahmedabad Municipal Corporation (AMC)
Sujit NAIR, Director, Paycraft Solutions

14 The minutes were written by Marine Adrion and Chloé Mecqinion
G. P. HARI: A holistic approach to public transport is needed: cooperation, collaboration and complementarity between the different transport modes are essential in planning.

T. MUNDHE: Intelligent Transport Systems (ITS) enable data to be collected to optimise decision-making. Hence, the demand for mobility should be a starting point for improving user experiences on a daily basis. In Pune, knowledge management is facilitated by internet sites, applications and citizen information centres.

Y. NAIK: Intelligent Transport Systems (ITS) force transport providers to offer continually enhanced services that match the demand for mobility.

S. NAIR: A long-term vision of intelligent transport in India is justified given its uniquely high propensity for using ‘intelligent’ services (the boom in the download of mobile applications, ticketing systems etc.) The country is particularly receptive to these new technologies in all fields, and in particular in transport.

Summary: The speakers explained the importance of collecting and analysing data to improve transport services, drawing on the examples of the cities of Kochi, Ahmedabad and Pune and the experience of the company Paycraft Solution.

Digital technology enables substantial databases to be compiled. They can then be used as a basis for reflection on transport, for example, at bus line command and control centres.

Analysis of this data improves our understanding of user behaviour and how the network really functions. Service management can be carried out according to a supply and demand rationale as a result.

Technology is, therefore, a useful decision-making tool. It encourages operators and providers (public and private) to strive to constantly improve their services: ‘ITS are permanent challenges!’ (Yatindra Naik).

Key words: Cooperation, Collaboration, Planification, Knowledge management, Challenges, IMTS, Fare policy, Interoperability, Information, Services, Users’ choice
Chair:
K. KESHAV, Managing Director, Lucknow Metro

Speakers:
Shailesh KUMAR, Founder, OLA
Amit SINGH, Co-founder, Shuttl
Akshima GHATE, Researcher, TERI
Anirudh BATWARA, Co-founder, UDAN Logisure

15 These minutes were written by Lucie Brisoux and Anaïs Marcel Delarocque
S. KUMAR: Shared mobility in cities provides many opportunities and is useful in many ways. It enables journeys and their impacts, such as the environmental cost, to be shared. Shared mobility is possible, but only if all the stakeholders within the city cooperate.

A. SINGH: By using technology and data we can optimise and improve shared mobility systems. For example, the Shuttle application does this by trying to convince residents to use buses instead of their cars.

A. GHATE: In India, rickshaws are a widely-used paratransit mode of transport at the centre of a number of issues. They are currently beset by various problems, but there are real opportunities for improving them. The Namma Auto project in Bangalore aims to boost paratransit as a real alternative to other means of transport.

A. BATWARA: Cooperation in the urban environment is hampered by many barriers. However, a shared mobility model could be viable if everybody accepts it and cooperates to make it work.

Summary: The current inclination is to deal with mobility problems through supply, whereas shared mobility would enable difficulties in large cities to be solved at demand level, i.e. by developing innovative projects that encourage residents to share their modes of transport.

The speakers presented real-life examples of shared mobility projects: the OLA and Shuttle applications, the Namma Auto project etc. The speakers highlighted one key factor in developing shared mobility that is common to all cities, examples and projects: it is simply not possible unless all the stakeholders in a city cooperate together including authorities, decision-makers, citizens and so on. It works when everyone agrees to share their resources. ‘Together we can!’ (S. KUMAR).

Key words: Vision for the future, ‘Together we can’, Application, Shared Buses, Rickshaw, Alternative, Opportunity, Cooperation
Chair:

Navin Mittal, Secretary (Urban Development), Telangana State

Speakers:

S. Sivamathan, Finance Director, Maharashtra Metro Rail Corporation
Rohini Balasubramanian, Consultant, LOTUS Environment Consultants Inc.
N. P. Shama, Chief Engineer, Bangalore Metro Rail Corporation Limited (BMRCL)

These minutes were written by Aisi Chang and François Lecaillez
S. SIVAMATHAN: At the moment, fare revenue alone is not sufficient to ensure the viability of the metro. Mr Sivamathan therefore presented different sources of non-fare revenue to bridge the gap, including a 1% tax exemption, advertising, and, of course, Transit Oriented Development (TOD). TOD is an urban strategy that promotes urban density and the development of land and real estate around transport corridors. The objective is to enhance land and real estate value alongside the corridors so as to optimise urban density.

R. BALASUBRAMANIAN: Dr Rohini Balasubramanian suggested that ‘carbon finance’ is important in funding urban transport and reducing greenhouse gas emissions. Carbon finance equates to the ‘climate obligations’ announced by governments and international banks.

N. P. SHARMA: N. P. Sharma suggested that developing the metro would be a very good solution to urban mobility issues and in the context of the complex transport situation in Bangalore. Thanks to its large capacity for moving users, the metro is able to offer diverse social, economic and environmental benefits. Metro revenue does not come from fares alone, but also from advertising and rent from commercial leases.

The reduction of operating costs through optimising metro station ventilation and using solar panels was also discussed.

Summary: The session presented several means for funding public transport projects such as the metro, in particular to reduce the gap between operating costs and fare revenue. The most promising initiative is the Transit Oriented Development (TOD) policy, which develops urban corridors around high volume modes of transport such as the metro and BRT with the aim of enhancing the surrounding real estate.

‘Carbon finance’ via ‘climate obligations’ is a less developed but similarly interesting initiative for facilitating energy transition while financing a number of public transport projects and thus reducing greenhouse gas emissions.

Lastly, the metro is a mode of transport that is accessible to everyone, has a high capacity and enhances land value. The long-term objective is to achieve mixed usage in real estate near public transport lines.

Key words: Transit Oriented Development (TOD), Floor Space Index (FSI), Land value, Non-fare revenue, Carbon financing, CO2, Urban project, International collaboration, Profits, Sustainable transport, Renewable energy
Speakers:
Yao Godefroy KONAN, Transport Ministry, Ivory Coast
Mohammed Souleimen OUANNES, University of King Faisal, Saudi Arabia
Tsutomu TSUBOI, Nagoya Electric Works, Japan

17 These minutes were written by Pierre Elgorriaga
Y. G. KONAN: Mr. Konan’s studies have demonstrated that the development of infrastructures and signage is essential to reducing the number of road deaths, the majority of which are pedestrians. For this to be effective, action plans need to be implemented to deal with the issue.

M. S. OUANNES: The number of road deaths increases in proportion to GNP per inhabitant because of the rise in the use of motorised vehicles. The issue for developing countries is how to reverse the trend so that rising living standards correlate to a reduction in accidents.

T. TSUBOI: The challenge for India in terms of road safety is to reduce both the number of cars and speed on the roads. Controlling urban sprawl may prove beneficial since very high densities automatically reduce speed on the roads, forcing residents to use alternative modes of transport to private cars.

Summary: Today, 90% of road accident-related deaths occur in developing countries. Road safety is, therefore, a major issue in the development of these countries. The critical situation actually costs a great deal of money, which could be invested in plans for improving safety. Fields to be prioritised are common to the different examples. Public authorities must tackle the issue by strengthening the system of checks/sanctions, in particular concerning driving licences.

At the same time, major investments in infrastructure and signage systems are needed.

The example of Abidjan demonstrates that the World Bank and other funding bodies may provide subsidies to support action plans linked to road safety.

However, in order to limit accidents in developing countries, public policy needs to go beyond the scope of mere road safety and embark on careful consideration of urban morphology and individuals’ habits.

Currently, the main challenge is to limit the number of cars on the road. This can be done by developing other modes of transport and by transforming behaviours. These changes will allow the trend linking increased GNP per inhabitant to a greater number of road victims to be reversed.

Key words: Regulation, Infrastructures development, Control of motorisation, Flaws in road safety penalty system, Speed control, Speed limits, Critical volume, Densification
Speakers:
Nalin BANSAL, Vice-President and Head of the National Payments Corporation of India (NPCI)
Ajesh KAPOOR, Director, NXP Semiconductors, India
Praveen SACHWANI, Director, Verifone

These minutes were written by Aisi Chang and Amandine Truong
N. BANSAL: There are different possible ticketing systems: on-board and off-board, paper tickets or chip cards. The NPCI chip card reduces fraud and facilitates access to transport. It is highly innovative and you can also use it to pay in the supermarket.

A. KAPOOR: Kapoor also presented the concept of ‘contactless cards’. The chip card may take the form of a credit card or watch (or something else that can be carried). It can also be integrated into a smartphone. In his opinion, the form it takes should be adapted to each city, with flexibility being key. In a smart city, new types of transport card are essential.

P. SACHWANI: Any solution should be based on demand, which should be identified beforehand. It is crucial to integrate all means of transport to create the optimal user experience. Sachwani’s company, Verifone India is the leader in all Indian contactless payment markets. 1.7 million devices are being used in the market.

Summary: The National Payments Corporation of India (NPCI) launched the first national inter-bank network. The debit card proposed, named RuPay, is now offered by around ten banks. It can be used online, or at 91,000 cash machines and 590,000 payment terminals.

The project aims to build a payment system that works using much lower interchange fees than large international networks, and it has big ambitions. RuPay is both an economic and social challenge for the government, which aims to guarantee the financial inclusion of a large proportion of the population, particularly in rural areas. However, it also represents a technological challenge and will almost certainly have to handle the deployment of mobile phone payments. To use the system currently, the bank card, or later a smartphone, is simply presented to pay for public transport, parking, or at the supermarket etc.

The idea is to facilitate accessibility to all modes of transport. However, data protection must be guaranteed via methods such as authentication, checking the owner’s card, the cryptogram system and restrictions.

Key words: Open-loop, Contactless card, Stored value, Interoperability, Intra-cities, Payment evolution, Payment devices;
19 – How to take Transport Projects as an Opportunity to Develop Social Urban Projects and Public Spaces?

05/11 14:30-16:00

Chair:
Swati Khanna, Project Manager, KfW

Speakers:
Thibaut DESCROUX, Project Manager, Lyon Town Planning Agency
Pablo SALAZAR FERRO, Transport Expert, CODATU
Julien ALLAIRE, Director of International Affairs, Transitec
G.P HARI, Urban Transport Manager, Kochi Metro Rail Limited (KMRL)
Thierry GOUIN, Project Manager, CEREMA

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19 The minutes were written by Doriane Jacq and Amandine Truong
T. DESCROUX: In Ouagadougou, discrepancies between the urban development project and reality are striking. For this reason, it is important to support local government in planning transport infrastructure to make it as relevant as possible. Pedestrian walkways and new roads may sometimes provide solutions to the problems of neighbourhood fragmentation caused by the creation of large highways (urban rupture), as, for example, they did in a neighbourhood in east Lyon, France. In this way, they become social facilities.

P. SALAZAR: In Curitiba, freeing the city centre from some of its activities by creating secondary centres with basic services proved socially beneficial. An efficient intermodal transport system provides access to the secondary centres. In Medellin, a detailed study was carried out on the neighbourhoods’ needs. The creation of a cable-metro provided residents with new job opportunities.

J. ALLAIRE: Julien Allaire emphasised the need to consider urban transport systems at neighbourhood level. For example, Lisbon demonstrates that simple investments can make neighbourhoods’ more inclusive by reducing the vehicle speed limits, improving access to public spaces for bicycles and pedestrians, and involving residents by giving them the opportunity to paint the streets in their neighbourhood. Too little attention is generally paid to smaller-scale initiatives, but when they are taken into account, residents’ needs can be met.

G. P. HARI: Hari presented the Kochi metro project which was able to provide social opportunities for residents, particularly women, through jobs in maintenance, ticketing and cleaning the metro. That is social inclusion.

T. GOUIN: Gouin presented the French urban mobility plans or Plans de Déplacements Urbains (PDU) created in 1982 for local authorities responsible for organising urban transport. The plans involve citizens throughout the process, from informing them to making shared decisions. The plans also draw on an analytical, operational, educational and political rationale by aiming to define user needs as precisely as possible.

Summary: In urban mobility plans, working at neighbourhood level and taking residents’ opinions into account can be a game-changer and improve satisfaction levels. This approach primarily involves making it possible for people to move freely and safely everywhere in the city. Enhanced public spaces, improved pedestrian walkways, secondary centres and reduced vehicle speed limits all facilitate decongestion. These factors also make the city more pleasant to live in. A focus on social facilities and opportunities goes hand in hand with an inclusive and environment-friendly city.

Key words: Local government, Pedestrian walkway, Social facilities, BRT stations, Basic services, Secondary centres, Small-scale shops, Simplified flow, Neighbourhood, Social inclusiveness, Social opportunities, Urban Mobility Plans
20 - Increasing productivity through ITS
05/11 14:30-16:00

Speakers:
Aneesh CHINUBHAI, Chief Technology Officer, Infinium Solutions Pvt Ltd
K. Rama MURTHY, Mechanical Engineer
Anil Kumar SAINI, COO, Railway System, L&T Metro Rail, Hyderabad
Dilip K. SINHA, CGM/S&T, DMRC
Yann HERVOUET, CEO, Instant System

20 The minutes were written by Marine Adrion and Chloé Mecqinion
A. CHINUBHAI: Technology can improve service productivity when it is applied to the field of transport technology, primarily by improving performance strategies and generating revenue. It is important to use diagnostic and prescriptive analytics to analyse the data because ‘in real time, it is always too late.’

R. MURTHY: Murthy drew on concrete examples from Mysore as possible forms of intelligent transport. Digital technology will be an inherent feature of future transport systems and we should take ownership of it to provide constantly improving mobility: ‘Data is here to stay; make the data work for you.’

A. K. SAINI: Any transport solution should be based on previously identified demand. The integration of all means of transport is crucial for an optimal user experience.

D. K. SINHA: Using the example of the Delhi metro, Sinha aimed to show that understanding users (age, gender, and reasons for journeys) makes it possible to build a solution based on real needs thanks to new technologies.

Y. HERVOUET: ‘We are all our own Transport Engineers.’ The lack of communication between travellers is a major hindrance to mobility. New technologies, with their many potential applications could help us overcome this.

Summary: Several examples of data use, from the simplest to the most sophisticated, showed how far transport can become ‘smart’. The collection, synthesis and analysis of data is able to provide relevant information to all stakeholders (users, operators and political decision-makers) for adapting behaviours and actions on the transport system. New tools can also model user behaviour and the services themselves so as to plan, anticipate and recommend service modifications that will correspond better to demand.

For example, Intelligent Transport systems (ITS), can inform passengers at a bus stop via an information screen that their bus will arrive in X minutes. What is more, data communicated by drivers to the Control Centre, means those drivers can also adapt their driving to coordinate more efficiently with other drivers: a real example of ‘making the data work for you.’

Applications developed for sharing data between transport users themselves can even replace control centres and provide an almost futuristic transport system with no intermediaries. For example, the application Instant System, out soon, creates ‘hitchhiking stations’, raising the question: how far will the revolution go?

The user experience is, therefore, always the first concern because the use of the transport system is linked to cost-effectiveness. The operator wants to satisfy its clients to ensure they continue to use the transport system. Meanwhile, citizens try to maximise the transport system’s usefulness. Economic and regulatory strategies, therefore, seem to be particularly efficient levers for facilitating service improvement and encouraging the transition to smart modes of transport.

Key words: Description, Diagnostic, Forecast, Prescription, Extrapolation, Bringing potential and knowledge for decision making, Fare policy, Multimodality, Payment integration
Chair:
I. C. SHARMA, National Project Manager, SUTP

Speakers:
R. HITHENDRA, Additional Commissioner of Police (Traffic) Bangalore City Police
K. Rama MURTHY, Chief Mechanical Engineer, KSRTC
Jyot CHADDA, Project Manager, WRI
Nalin BANSAL, Vice-President and Director, National Payment Corporation of India

21The minutes were written by Doriane Jacq and Théo Serre.
J. CHADDHA: The use of digital technologies to facilitate transport and mobility is an irrepressible movement. The use of data enables transport systems to be optimised and promotes the development of alternatives to conventional modes of transport, such as shared mobility. Digital technology helps transport solutions to meet the demand. However, they operate on the principle of economic profitability, which could lead to a spatial concentration of services and exclude a sector of the public. Regulation of the issues related to digital technology at a global level seems essential.

K. R. MURTHY: Demand for mobility is changeable. A lot of money is invested in heavy infrastructure. However, using cross-tabulated data from multiple sources helps us match demand in real time as closely as possible.

HITHENDRA: The use of a GPS-driven management system coupled with improved passenger information enhances transport efficiency as well as road safety. Consequently, the authorities can improve driver training on identified issues and obtain significant results.

N. BANSAL: The Open Loop payment system is a single tool that provides access to multiple transportation services. It is, therefore, a high-quality tool that promotes intermodality.

Summary: The speakers used case studies to show how digital technology has been used to facilitate urban mobility, thus giving us the necessary insight to grasp new practices. The use of data from cross-tabulated sources and from broader digital technologies benefits services. It ensures a marked improvement in service quality and passenger and road-user safety. By more closely matching transport solutions to demand, digital technologies reduce the consumption of resources. Digital technologies cannot solve every problem. A transport system based on data exploitation alone risks compromising equal access to services. More vulnerable and isolated people need to benefit from transport that is adapted to their needs and resources. Regulation is essential if we are to move beyond the simple principle of economic profitability.

Key words: Big Data, GPS, Open Loop
Chair:
Prof. Shivanand SWAMY – Executive Director, CEPT University

Speakers: Dipesh KADIYA, Industrial Trip Generation Model for Himmatnagar, Industrial Area of Gujarat
P. D. KUMAR, Performance Evaluation of Intermediate Public Transport through a Benchmarking Approach: A Case Study
S. BHUSAL, Land Use Planning and Road Infrastructure Policy in India: The Role of Spatial Data in Decision Making
V. K. A. & A. WARRIER, Land Use Transport Integration from a User Behaviour Perspective: A Case Study of Greater Cochin
N. SINGH, Understanding Commuter Travel in India Using the Census Data, India Institute of Technology, Delhi

22 These minutes were written by Maud Berthelot and Simon Desmares
D. Kadiya presented his research into the travel behaviour of employees in the city of Himmatnagar. He concentrated primarily on employees in the industrial sector. He also studied the transport of goods and freight. He used multiple regression analysis which is one of the most appropriate methods for evaluating circular migration.

P. D. Kumar studied the performance of paratransit at Srikakulam (Gujarat). Using performance indicators such as availability, comfort and safety, his study demonstrated that paratransit should be adapted to coordinate better with the public transport system. However, stopping near bus stops or transport hubs should be prohibited to avoid competition with that network.

S. Bhusal demonstrated that the authorities’ selective use of data often hides another reality. She also raised the issue of cycle paths and pedestrian walkways, which are under-used due to a lack of safety. Furthermore, she lamented the lack of spatial data on land use, which could form the basis for more intelligent and sustainable public transport planning. She cited the Hyderabad local authority, which has begun mapping informal establishments, as an example.

V. K. A. and A Warrier then presented their analysis of land use and travel behaviours in Kochi city. They showed the transport experience from a user point of view using questionnaire methodology. They concluded that local residents would appreciate being listened to more attentively during the decision-making process so that transport plans match local realities better.

N. Singh worked on modelling professional travel in India using census data. His analysis focussed on the modes of transport and journey times of home-work commutes, and on ‘no travel’ people. His conclusions: home-work commutes are shaped by zoning, which creates business districts and residential areas. What is more, ‘no travel’ does not equate to immobility. No travel can be positive if it is down to working at home or in the neighbourhood, but it is negative if it results from a lack of local jobs, in particular for women. He would like academic research to focus more on the complementary notions of ‘gender-jobs-transport’.

Summary: The first symposium at this conference tackled the theme of land use and travel behaviours. The meeting identified ways of improving transport efficiency and reducing the transportation crisis in India, such as coordinating paratransit with public transport, using data in an intelligent and sustainable way, paying closer attention to local realities, and studying the reasons for travel according to gender in greater depth. It is, therefore, clear that Indian research in the field of transportation is very dynamic. Universities are now waiting for concrete action to be taken, which relies on the public authorities’ commitment.

Key words: ceramic industry, GIDC Industries, travel behaviours, Intermediate Public Transport (IPT), Benchmarking approach, Intelligent Transporting System (ITS), Level of Services (LOS), Trip maker characteristics, Spatial Data, Transporting planning, Land use, WRI Stamp Accelerate program, Safety, Comfort, Reliability, Affordability, Patterns of work, Census Data, Gender, No-travel
Speakers:

Vidhya RAGHVAN, Creating Alternative Mobility Options for Private Mode to Public Transport Mode: The Case of Gandhinagar

Vinod RATHOD, Analysis of Metro Rail Project Selection Bias with Principal Agent Model: A Case of Delhi, Bangalore, Mumbai, Jaipur and Chennai

Dennis JOSE, Angel JOSEPH, Feasibility & Travel Demand Study on Mass Transit Modes

Madhuri JAWALE, Parking Supply Management as Strategy to Reduce Congestion and Improving Mobility in Core Area: Case study of Bhopal City

23 The minutes were written by Thomas Bourdin and Claire D’Arco
**V. RAGHVAN**: As a new city, Gandhinagar benefited from planning that created excellent infrastructure. However, the range of public transport available was a second priority. To redress this problem, V. Raghvan proposed a transport network strategy based on the study of daily journeys with public transport services positioned in key areas where demand for mobility is greatest.

**V. RATHOD**: Rathod questioned the relevance of the systematic choice of a metro in large Indian cities. There is a bias for this form of public transport because cities are motivated by the brand image a metro gives them, rather than by how well it meets residents’ travel needs. As a result, project costs are under-estimated and projects turn out to be financially unprofitable and ill-adapted to needs. Rathod believes that these problems can be explained by the principal-agent rule, where the principal agent (central government) is ill-informed in comparison to states and cities, who wish to attract funding to develop their cities’ images, rather than resolve travel problems. Consequently, he believes that metro systems should be overseen by central government.

**D. JOSE & A. JOSEPH**: Mass transit systems have very different characteristics (cost per mile, capacity, speed, flexibility, intermodal potential etc.). Transport policies need to take these features into account when making choices so as to find the best solution to fit the context. Rather than imposing these systems from above, an inclusive (bottom-up) approach should be taken, which aims to facilitate mobility rather than profit.

**M. JAWALE**: A paradigm shift, primarily inspired by European models, is needed to deal with parking problems in India. Regulated parking places should be offered where demand is high and parking chaotic. However, the price of parking should also be used to incite a reduction in the use of private vehicles and an increase in the use of public modes of transport. An optimal balance should be sought between the amount of parking available and the price, which must not be too high or too low if it is to be effective. New national legislation is therefore required.

**Summary**: To deal with pressing public transport needs in Indian cities, the speakers put forward solutions based on flexibility and inclusion. Solutions should be based on empirical studies of needs and be wary of one-size-fits-all solutions. Major projects, notably metros, have demonstrated their limitations many times over, often being highly onerous and sometimes disconnected from real travel needs. A major project approach is not, therefore, the absolute answer to public transport development. Major projects should be accompanied by other less cumbersome, but indispensable, solutions to create a paradigm shift and ensure that the overall provision meets the demand for mobility, for example, by creating a multimodal system, a real parking policy and an innovative ticketing system to generate client loyalty.

**Key words**: Planned city, Mass transit system, Dependency on private modes, Offer and demand, Metro, Information gap, Principal agent rule, Cost estimate, Parking, New paradigm
Chair:

Shalimi SINHA, Research scholar, CEPT University

Speakers:

Akhilesh CHEPURI, Travel Time Variability Modelling of Selected Bus Routes in India

Anna Mariya LUKOSE, Planning the Transit Interchange Zones

Pintu SAINI, Feasibility of Electric Bus Operation in Urban Areas – Case Study Delhi

Banshi SHARMA, Role of Paratransit: The Case of Kanpur, Aligarh and Hathras, UP (India)

24 These minutes were written by François Lecailliez and Pierre Elgorriaga
A. CHEPURI: Currently, transport times represent the main performance criterion. This criterion is affected by many factors, such as lack of signage, traffic levels and road accidents. Chepuri’s study of Surat’s BRT system therefore aimed to analyse journey times according to bus type and segment. By collecting data using GPS, Chepuri concluded that the times taken to complete journeys on the BRT system vary less than those on other means of transport.

A. LUKOSE: Developing intermodality is one of the major challenges for transport in India today. The large distances between different modes of transport coupled with poor access to stations represent major obstacles to fluid and optimal mobility. Mrs Lukose proposed the creation of pedestrian footbridges, signage and parking facilities as possible means for improvement.

P. SAINI: Given climate issues and greenhouse gas emissions it seems that all the buses reliant on fossil fuels need to be replaced with electric buses. Saini champions this replacement as a means to escape dependence on petrol, enable financial gains and improve efficiency.

B. SHARMA: Informal transport must be recognised if a well-functioning transport network is to be created. The rickshaw plays a major role in mobility in India. Combining informal modes would help the transport network to be structured more efficiently based on synergies between formal and informal transport.

Summary: The issues faced by the public transport sector in India are inspiring a certain number of academic studies. The growing demand for mobility has resulted in huge transformations in the sector. The main issues that public transport is facing are journey times, dependence on fossil fuels and greenhouse gas emissions.

To deal with these complex issues, several initiatives that have proved effective were raised during the session:

- The promotion of the BRT system, which is less susceptible to travel time variability
- The use of TOD to facilitate access to transport for the greatest number
- The replacement of combustion engines with electric-powered buses in order to limit the negative impact on air pollution
- Official recognition of informal modes of transport to complement the formal system in order to optimise the transport network.

Key words: Rickshaw, Informal Transport, TOD, Electric Buses, Greenhouse gases, Skywalks, Multimodality, Air pollution, Oil dependency, BRT, Travel time variability
Chair: **Durga Shanker MISHRA**, Secretary of State, Ministry of Housing and Urban Affairs, Government of India

Speakers:

**O. P. AGARWAL**, CEO, WRI India

**Salah Abdulatif AL DILIMI**, Rail Infrastructure Manager - Roads and Transport Authority, Dubai

**Shri Brijesh DIXIT** – Managing Director, Maha Metro Rail Corporation Ltd

**Gregory CHOW**, Project Manager, Systra

**Pankaj Kumar BANSAL**, Managing Director, Chennai Metro

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25 These minutes were written by Doriane Jacq and Claire D’Arco
O. P. AGARWAL: Responsibility for TOD is shared between many institutions: the coherent implementation of TOD concerns transport companies as well as the whole city. TOD redefines the city: by inciting mixed land usage, it reduces the distances travelled, thus reducing journey times. High quality transport must be connected to other modes of transport, including pedestrians, in order to provide ‘door to door’ connectivity.

S. AL DILIMI: BIM (Building Information Modelling) makes reliable digital capital out of data and creates 3D scenarios. When an operator has more information, it can define services better, thus reducing future costs. Operating expenditure or OPEX, is often unknown, but can be estimated more precisely using BIM.

B. DIXIT: When using a traditional information source, operating costs rise during the third phase of a project’s lifecycle, i.e. during the implementation, maintenance and renovation phase. With BIM, the initial phase, i.e. the design and planning phase of the project, costs the most but all costs in the third phase remain constant.

G. CHOW: Operators have to find secondary revenue, or non-fare revenue, through advertising rights, land value use or by renting infrastructure to private companies. In Hong Kong, regular reviews were proposed to examine fares, a diversified range of services and operators’ need to optimise revenues according to the ability of each passenger to pay.

P. K. BANSAL: The Chennai metro was the first to establish a PPP to operate the service, with a 5-year contract. Service levels were fixed by contract, and only competent companies with previous metro maintenance experience were allowed to bid. In addition, maintenance costs are based on the number of hours the trains are in service rather than staff numbers.

Summary: The session focused on the various aspects of managing and funding a metro network. The specificities of the Indian context include: institutional fragmentation, high levels of population density and a physical environment that discourages walking. Agarwal believes that the solution lies in creating a versatile system to support the creation of mass transit systems with integrated bus services, pedestrian walkways etc. He also highlighted that India’s institutions are fragmented, which means that TOD cannot be effectively implemented; that there is currently too little focus on planning mixed usage spaces; that urban density is already very high; and that pedestrian infrastructure is poor. Furthermore, the creation of these complex networks could be aided by the use of technology: BIM, for example, presented by Salah Al Dilimi, enables data to be collected to create 3D virtual scenarios. As Brijesh Dixit stated, ‘a connected environment would introduce more efficiency into project lifecycles.’ The other major issue addressed was that of running a metro. During the session, Gregory Chow presented different funding methods that have proved effective, primarily in Hong Kong.

Key words: Metro, TOD, Mixed land use, Pedestrians, Interface, ‘Feeder friendly stations’, BIM (Building Information Modelling), OPEX, Digital, Information, Non-fare revenues, Fare policy, Public-private partnership
Chair: Ashwini Bhide, Managing Director, Mumbai Metro Rail

Speakers:

Michel TINDANO, Managing Director of SOTRAL, Transport Society of Lome, Togo
Michele VUILLIEN, Councillor of Lyon Metropole, French Senator and Member of SYTRAL
Stéphanie RIEGER, Head of the Urban Development and Mobility Department in South-East Asia, KfW
Som Dutt SHARMA, Director of Business Development, DMRC (Delhi Metro Rail Corporation)

26 The minutes were written by Doriane Jacq and Amandine Truong
M. TINDANO: Lomé city needs to optimise the existing bus service by linking it with paratransit. The choice of paratransit, which is much cheaper than motorcycle taxis in particular, seems appropriate. Intermodality is now being addressed in terms of planning: the measures envisaged include the creation of an adapted ticketing system that is accessible to all, and the development of park-and-ride schemes.

M. VULLIEN: Two trends need to be taken into account in the Lyon metropolitan area: the steep rise in demand for different modes of transports, and changes in the practices of individuals and the global environment. New lifestyles require the transport system to be restructured and adapted. A strong authority responsible for developing and regulating the network, such as SYTRA in Lyon, is key in achieving such a transformation.

S. RIEGER: ‘Cities need more than a metro.’ It takes more than a metro system to facilitate urban mobility in a city. Above all, roads must be shared in an intermodal context that guarantees coordination between various forms of public transport. It needs to be coordinated by a strong authority. Rieger supports the new generation tram system established in Frankfurt and cited the benefits of tramways, which are less onerous in terms of investments and operations but offer a higher level of comfort to users. In relation to India, she cited two projects that took an inclusive and innovative approach: the Nagpur and Kochi metro projects both combine an integrated metro and ferry system.

S. D. SHARMA shared his support for the idea of an elevated metro, which does not take up much space in a city.

Summary: Intermodality seems to be a common issue for most cities. A significant rise in the demand for transport has been observed in the south as well as the north, as is the case in Lyon. The meeting raised the need to involve the population so as to best understand usage and expectations. Global planning is required. This sometimes means that transportation has to be profoundly restructured and adapted, without creating a new system. Thus, mass transit systems should not be a systematic choice. Alternative measures may include the following: the creation of park-and-ride schemes, the creation of a fund for urban mobility and adapted fare policies. Above all, a strong institutional framework capable of coordinating the different modes of transport is indispensable. Nevertheless, it should be noted that views on the best the choice of transport in a city were far from unanimous. Some advocated the tramway, whereas others preferred the elevated metro. Many alternatives to a ‘Mass Rapid Transit System’, are available but the best choice is up for debate. Division was particularly clear at the end of the meeting when many people raised the high cost of an elevated metro.

Key words: Planning, Park&Ride, Negative externalities, Strong authority, Flexibility, Multimodality, LRT, New generation trams, Shared roads, Metro
27 - Research Symposium – Safety and Traffic operation
06/11 11:30–13:00

Chair: Geetam Tiwari, Professor, IIT Delhi
Speakers:
Ashwini BOKEY, User Behaviour towards Traffic Violation
Devunuri Sai PRANEETH, Image Processing Techniques for Traffic Data Extraction from Aerial Imagery
Ashlesha ITHAPE, Shubham BANNORE, Journey Risk Management for PMPML Buses in Pune City
Vinod VASUDEVAN, Relationship between Mobility and Pedestrian Safety: A Region-Wide Level Study

27 These minutes were written by Aisi Chang and Claire D’Arco
A. BOKEY: Presentation of a sociological study highlighting the reasons behind traffic violations. The main factor is copying other road users’ behaviour, i.e. it is the ‘social norm’.

D. S. PRANEETH: Presentation of two techniques for using aerial photography to collect traffic data: the Otsu method (which allows for automatic thresholding) and the edge detection technique. He distinguished between the frequency of two-wheelers, cars and heavy goods vehicles on selected parts of the road.

A. ITHAPE and S. BANNORE: Bus journey risk analysis involves using a risk analysis methodology that encompasses various factors such as the quality of the road, time of day, lighting, traffic conditions and the behaviour of road users. Risk analysis is done using 3 variables: risk exposure, frequency and severity of the consequences.

V. VASUDEVAN: As GNP rises, authorities build more road infrastructure causing the use of motorised vehicles to rise. This is accompanied by a rise in road accidents. In his research, Vasudevan has confirmed that urban transport plans do not take pedestrians into account and do not offer them alternative solutions, thus putting them in danger.

Summary: The speakers at this scientific symposium were predominantly young Indian students. The younger Indian generation is increasingly questioning road safety in India. Students are choosing this theme as a research topic in order to drive progress. Diverse methods and techniques are used to analyse road safety factors, such as road traffic composition according to type of vehicle.

It was noted that lack of road safety on Indian roads is due to human and physical factors. The first study noted with regret that when police sources alone are referred to 95% of accidents are attributed to human factors (in particular due to violations of the highway code) omitting other factors. Other studies have clearly shown that other factors also explain accidents: state of repair of the roads, traffic density, weather conditions etc.

The last presentation also raised the issue of the link between rising GNP and falling safety and increased road deaths. However, it was also pointed out that rising GNP can have positive effects on road safety if public authorities take the necessary measures. In some countries, funds raised have enabled roads to be renovated and the risk of accidents has been reduced.

Key words: Road safety, Social norms, Traffic regulations, Violation, Traffic data, Density, Classification, Images, « Edge Detection Technique », JRM « Journey Risk Management », Pedestrians, GDP
Chair: Y. HAYASHI, President, WCTRS

Speakers:
Yoshi HAYASHI, President, WCTRS
Ashish VERMA, Associate Professor, Indian Institute of Science (IISc), Bangalore
Atsushi FUKUDA, Professor, Nihon University, Japan
Varameth VICHIENSAN, Director of the Transport Division, Kasetsart University, Bangkok
Tetsuhiro ISCHIZAKA, Associate Professor, Nihon University, Japan

The minutes were written by Marine Adrion and Chloé Mecqinion
Y. HAYASHI: Presentation of research in the transportation field and invitation to the WCTRS conference to be held in two years’ time in Mumbai.

A. VERMA: The Indo-Norwegian Climatrans project proposes scenarios and methods for limiting the negative external effects (pollution and congestion) of urban transport and for adapting transport systems to make them more resilient.

A. FUKUDA: The use of market mechanisms seems appropriate in the development of intelligent and sustainable transport systems (Clean Development Mechanism).

V. Vichiensan: In Thailand, the great floods of 2011 boosted awareness of climate change and its potential impact on transport networks, leaving the country with little other choice than to intensify research into adaptation. Forecasts using different scenarios are helping to identify the most appropriate measures for creating a resilient transport system (pumping stations, topography etc.) and could inspire other cities with similar profiles.

T. ISHIZAKA: Public opinion is divided on the use of low-carbon transport: the most affluent sectors of the population claim to be in favour of these innovative modes of transport (without necessarily using them) while most of the population is not prepared to change their behaviour. The main cause for resistance to change is practical: these sectors of the population generally have no access to clean public transport.

Summary: The World Conference on Transport Research Society (WCTRS) coordinated the speakers’ input on the research methods that could be shared between cities in developing countries to advance reflection on transport resilience and to devise solutions for reducing greenhouse gas emissions.

The emergency situation, manifest in the recurrent flooding caused by global warming, has motivated researchers to find scientific methods to help decision-making and prompt concrete action. How can we limit environmental damage caused by transport?

Moving from an ‘all car’ model to public transport is not easy in all contexts. In many developing countries, the car is still synonymous with higher social status, and population growth is leading to greater demand for mobility. It is, therefore, necessary to raise global and citizen awareness. Many speakers highlighted the fact that this may primarily take the form of public policy incentives. The ‘Push and Pull’ concept (A. Verma) sums up the panel’s vision of how mobility behaviour could be changed: the creation of attractive measures to encourage the use of public transport alongside measures limiting car use.

The work produced by these scientific studies enables the socio-economic and environmental costs of each mode of transport to be estimated, thus providing figures that the stakeholders (political decision-makers, operators and users) are particularly sensitive to. It also identifies levers for the regulatory, economic and technological actions needed to remodel public transport systems in intelligent and sustainable ways.

Key words: Resilience, Scenario, Adaptation, Mitigation, Business as usual, Biofuel, CDM: Clean Development Mechanism, Flooding, Congestion, Pumps, Modelling, Surveys, Workshops
29 - Linking Urban Transport and Environment

06/11 14:30-16:00²⁹

Chair: Ajai MATHUR, General Director, UMTC
Speakers:
USHA RAO, Senior Expert, KfW India
Anumita Roy CHOUDHARY, Research Scholar, Centre for Science and Environment, India

²⁹ These minutes were written by Thomas Bourdin and François Lecailliez
**U. RAO:** Forms of transport that contribute significantly to greenhouse gas emissions (GHG) necessarily increase the frequency and intensity of climate risks. It is, therefore, clear that cities and countries need to become more resilient. The United Nations Development Plan (UNDP) is implementing solutions to reduce GHG. In this context the example of Bhutan is significant. In Bhutan 40% of GHG emissions are caused by transport and Bhutan’s strategy is to invest in the low carbon economy by freeing up funds to transform the market and reach objectives.

**Challenges faced when implementing the Paris Climate Agreement’s SDGs:** Presentation of the 17 Sustainable Development Goals (SDG).

**ANUMITA ROY CHOUDHARY:** The rise in the use of motorised vehicles in India is particularly problematic. Car use is increasing, as is the size and weight of vehicles, resulting in greater petrol consumption and GHG emissions. The situation is even more troubling given that India is one of the only countries in the world not to have implemented fuel consumption standards. Traditionally, most journeys in Indian cities were undertaken on food or bicycle, but the car is now increasingly dominating urban spaces, to the detriment of active and sustainable transportation. The system, which favours cars, needs to be challenged in order for sustainable modes of transport to be developed.

**Summary:** Given that transport plays a major role in creating GHG emissions, there is an increasingly pressing need to raise awareness and create adapted policies. SDGs create a practical framework with appropriate sector-specific strategies and policies, primarily aimed at fighting GHG emissions. The Indian context is unique because its major challenge is the increasing reliance on motorised vehicles coupled with the car-centred development model many cities have adopted. In fact, personal vehicles not only emit GHG but are also detrimental to the development of more sustainable modes of transport such as public transport, walking and bicycles. The key lies not only in developing alternative modes of transport, but also in revisiting the way in which cities themselves are developing and examining how that encourages car use: unpassable roads, gated communities etc.

**Key words:** GES, UNDP, INDC, Economy, Markets, Transport, SDG, Paris Agreement, Automobile, Sustainable modes of transport, Consumption, Urban design
30 - Road safety  
06/11 14:30- 16:00

Chair:
R. K. SINGH, Chief Engineer, Lucknow Metro

Speakers:
R. K. SINGH, Chief Engineer, Lucknow Metro  
Kumar MOLUGARAM, Osmania University, Hyderabad  
Julien ALLAIRE, Director of International Affairs, Transitec  
Ramzi SALAME, Executive Director, National Road Safety Council, Lebanon  
J. Mohan NAIK, Chief Engineer, Hyderabad Road Development Corporation Ltd, Government of Telangana

30 These minutes were written by Maud Berthelot and Simon Desmares
R. K. SINGH: Mobility policy should democratise the road where possible, i.e. give sufficient space to all modes of transport, including pedestrians, cyclists, public transport and cars. Existing legislative tools are effective, but the challenge is making sure that they are rigorously applied.

K. MOLUGARAM: To reduce road accidents in Hyderabad, analysis needs to be carried out at the micro level, to identify causes and accident hotspots (intersections, poorly-marked or badly-lit roads etc.), and at the macro level, to combat speeding and drink-driving.

J. ALLAIRE: Taking a multimodal approach to the reorganisation of roads could considerably reduce the number of accidents, by using levers such as the reclassification of spaces, or three-coloured traffic lights, to control access to specific areas.

R. SALAME: Lebanon initiated a very ambitious policy to promote road safety with its ‘New Lebanese Law on Traffic’. The policy is based on major institutional developments, communication campaigns, and in-depth research, primarily to create data. It has increased the safety of road users considerably.

J. M. NAIK: Traffic management measures must be implemented to guarantee road safety, in particular by creating dedicated traffic corridors (for pedestrians, cyclists and public transport), speed limits and a review of how intersections are designed and controlled. A road safety audit should also be carried out to examine preventative measures.

Summary: How can roads be made safer? The boom in the use of motor vehicles has resulted in road accidents becoming one of the main causes of death in many developing countries, in particular in Africa. However, there are still very few road safety specialists given the scale of the problem. In India, the modal share of motorised vehicles has grown constantly over the last three decades alongside a similar resultant rise in accidents, particularly as a result of speeding, distraction and driving under the influence. The country has responded with an adequate set of legal measures but implementation remains too limited. Coercive and preventative measures need to be escalated urgently to raise public awareness, such as the mandatory use of helmets and seatbelts. Ghandhi’s ‘non-violent’ principle, needs to be translated into a ‘non-violent’ urban travel culture based on active and sustainable transportation.

Key words: Democracy on the road, Transport planning, National Urban Transport Policy, Hot spots, Accidents, Accidentology, Requalification
31 - Innovative Funding for Urban Mobility
06/11 14:30-16:00

Chair: Bernard RIVALTA, Vice-President, CODATU

Speakers:
Amadou SAIDOU BA, President, CETUD
Thibault DE LAMBERT, International Director, RATP Dev
Marc DELAYER, President, Public Transport Purchasing Organization (CATP)

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These minutes were written by Lucie Brisoux and Anaïs Marcel Delarocque
A. SAIDOU BA: The transport demand in Dakar was not being met and costs to local authorities were high. An original funding programme, supported by the World Bank, was implemented to give actors in public transport and paratransit access to credit in order to modernise their offer.

T. DE LAMBERT: The French business model for funding transport has come to the end of the road because it is failing to meet the growing needs of the public transport sector. A new model focusing on data use and the digital economy needs to be invented.

M. DELAYER: Central procurement agencies enable regional authorities to optimise their public spending on transport. The system could be implemented in developing countries, notably in West Africa, once the specification has been adapted to the African context.

Summary: The speakers addressed the theme of funding public transport, drawing on the French and Senegalese contexts.

In France, issues in the Île-de-France region concerning the public transport business were raised. New sources of revenue are required if performance is to be maintained and infrastructure is to be modernised and made safe. One solution that could allow operators to meet these needs, might be to make greater use of the digital economy.

A central purchasing scheme already exists in France, enabling vehicles to be purchased by local authorities in an optimal way and giving them access to competitive prices. The question today is whether this system can be applied to developing countries, notably West Africa. It could potentially improve economic efficiency by providing adapted facilities and equipment, local control over purchases, and more transparency and legal security.

In Senegal, the issue is different. The goal was to organise a transport service despite a lack of payment guarantees for local actors. Dakar’s local authority implemented an innovative system to fund the city’s urban transport fleet renewal programme. The programme gave access to credit to those actors who were not eligible under the classic funding system. The programme was then extended to other local authorities, making Senegal a pioneer in modernising transport in West Africa.

Key words: Finance Structuring, Grouping and professionalisation of operators, Digital economy, Purchasing optimisation, Partnerships
Speakers:
Navin MITTAL, Secretary (Urban Development), Telangana.
Dominique BUSSEREAU, President, CODATU
Amadou Saidou BA, President, CETUD (Dakar)
Durga SHANKER MISHRA, Secretary (Urban Development), Ministry of Housing and Urban Affairs, Goll
Kalvakuntla Taraka RAMA RAO, Minister for information Technology (E&C), Municipal Administration & Urban Development, Industries & Commerce, Mines & Geology, Public Enterprises and NRI Affairs, Telangana, Government of Telangana.

32 The minutes were written by Théo Serre
N. MITTAL: After the customary acknowledgements, Telangana’s secretary announced the launch of a sizeable government housing programme. The programme is part of the Indian Government’s regional developmental initiative. Mr. Mittal commended the conference’s success and its ability to generate connections and exchanges between stakeholders in mobility.

D. BUSSEREAU: Mr Bussereau warmly thanked the conference’s participants and sponsors. The president of CODATU then highlighted the relevance of the conference as an event that compares experiences and encourages contextual differences and common solutions to emerge. He concluded his speech by awarding the CODATU prize for the best doctoral thesis on urban mobility in developing countries.

A. SAIDOU BA: Mr Ba began his speech by addressing the climate emergency and the pressing need for sustainability in terms of mobility. He reaffirmed Senegal’s resolution and gave details of the planned achievements that fall within the scope of the CETUD programme, including the new Dakar airport, the development of a BRT system and the advent of a regional express train.

CETUD’s president concluded his speech by announcing that the 18th edition of the CODATU conference is to be held in Dakar. He called for African stakeholders in mobility to rally behind the event.

D. S. MISHRA: Mr Mishra commended all those who participated in the conference and praised the quality of Franco-Indian relations, notably in the mobility sector. He then discussed the many other inherent challenges for countries in the south and called for the differences in development between the north and south to be put into perspective given the contextual differences. The minister concluded his address by announcing the next ‘Urban Mobility India’ Conference in Nagpur in 2018.

K. T. RAMA RAO: The minister gave an overview of mobility issues, summing up with: ‘Mobility is a challenge and an opportunity’. He then discussed the complexity of the Indian context as an issue when creating an integrated transport policy and called for the development of solutions specific to the Indian context as a result. In this context, Indians adopt what they refer to as a ‘Jugaad’ state of mind, which roughly translates as ‘doing more with less’.

Summary: The speakers all praised the success of the conference and the commitment of the participants and various sponsors. The function of the conference in connecting stakeholders and disseminating information was also commended. The closing speeches provided a forum for announcing many regional development programmes that adhere to the mindset and approach championed by CODATU and the Indian mobility actors. This approach was further encouraged when prizes were awarded in recognition of innovative initiatives in the field of mobility. The presentations culminated with Amadou BA’s announcement of the next CODATU conference in Dakar in 2020.

Key words: Valedictory, Contextual differences, Congratulations, Announcements, CODATU 2020, Jugaad
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