

Workshop 1

Integrating rail and bus based modes (including BRT) into a user-relevant transport system



Prof Graham Currie - Chair

Dr Dario Hidalgo - Rapporteur



Workshop 1 – FOCUS and STRUCTURE

- Focus Areas:
 - Challenges of Modal Integration
 - Role for transit modes
 - Bus, BRT, LRT, Rail
- Strategic Structure
 - Intermodal Integration
 - Intermodal Competition
 - BRT system development & challenges compared to rail



Workshop 1 – FOCUS and STRUCTURE

- Focus Areas:
 - Challenges of Modal Integration
 - Role for transit modes
 - Bus, BRT, LRT, Rail
- Strategic Structure
 - Intermodal Integration
 - Intermodal Competition
 - BRT system development & challenges compared to rail

Tactical Structure (10 workshop sessions)

Intermodal Integration (3 sessions)

A. Perspectives on Intermodal Integration

- 4 Papers

Intermodal Competition (2 sessions)

B. Perspectives on Intermodal Competition

- 4 Papers

BRT systems (3 sessions)

C. User and Operational Perspectives on BRT System Performance

- 2 Papers

D. BRT Design and Development Challenges

- 2 Papers

E. BRT Implementation and Future Pathways

- 1 Paper

Intermodal Integration

What is transit mode integration?;



Seamless mobility chains through the city including:

- Networks (Cooperative, Complementary not Competitive)
- Fares/Information
- Physical Interchange Design
- Land Use
- Organisations

How enhanced?

Challenges

Best Practices

User Relevant Aspects

Intermodal Integration

What is transit mode integration?;

How enhanced?

Challenges

Best Practices

User Relevant Aspects

- Need a Vision (the 5 E's)
- Need Clear Organisational Structures with strong 'buy-in' for objectives



Van Oort, N. et al. (2017)

STRATEGIC

- Aims, Consultation (buy-in), Organisations, Regulatory Structures

TACTICAL

- FUNCTIONAL elements; system design, network design, modes, services, routes, regulations,

OPERATIONAL

- operations, wayfinding, visible by user, physical stuff, information

Intermodal Integration

What is transit mode integration?;

How enhanced?

Challenges

- Lack of Vision
- Poor Organisational Cooperation and Control
- Complex and Difficult to Articulate Concept

Best Practices

User Relevant Aspects

Intermodal Integration

What is transit mode integration?;

How enhanced?

Challenges

Best Practices

User Relevant Aspects

Mega Cities

London, Paris (Anne Hidalgo; mayor), Hong Kong (UITP top integrated city)

Mid sizes Cities

Stockholm, German cities
Amsterdam, Singapore, Zurich, Oslo, Helsinki

South America Mega Cities

???

Lower Density Developed

Gold Coast/Canberra (organizational, land use transport)
Portland – Tri-Met
Transport for Newcastle??

Technology new solutions

Google maps (tech fix); Smart Cards
New Mobility Solutions; Smart Phones



Intermodal Integration

What is transit mode integration?;

How enhanced?

Challenges

Best Practices

User Relevant Aspects



- Its not about the Mode stupid!**, it's the user experience and wider impacts on society
- Safety, travel time, reliability, comfort, land use

Intermodal Public Transport Competition

- ❑ PT Competition Not Common (Wasteful Competition) even in deregulated environment – for all modes; there is a lot

BUT is Competition Choice?

- ❑ BIG City Transit Overlap Geographies (Hong Kong/Singapore)
- ❑ Ubiquitous Bus Coverage; Natural Overlap
 - Bus demand more affected by Rail (meta study)
 - But bus local function; rail distance longer function (incidental Competition)
- ❑ Competition by Good Design
 - London Tube capacity relief; fare choice
 - Provides resilience (New York; Hurricane Sandy)
- ❑ Nice to have choice (for wealthy) cities



Why/How Does It Occur?

Impact

How Managed

Roles for Transit Modes

Trade Offs Between Modes for Users

Intermodal Public Transport Competition

- Can Be Good
 - By Design (capacity, fare choice, resilience)
 - Competition (Conventional Wisdom; reducing price, increase service)
- Can be Bad
 - Wasteful competition (pax losers)
 - Poor image (on route competition; chaos of BRT queues)
- Better in high volume, mass transit cities – not so good elsewhere

Why/How Does It Occur?

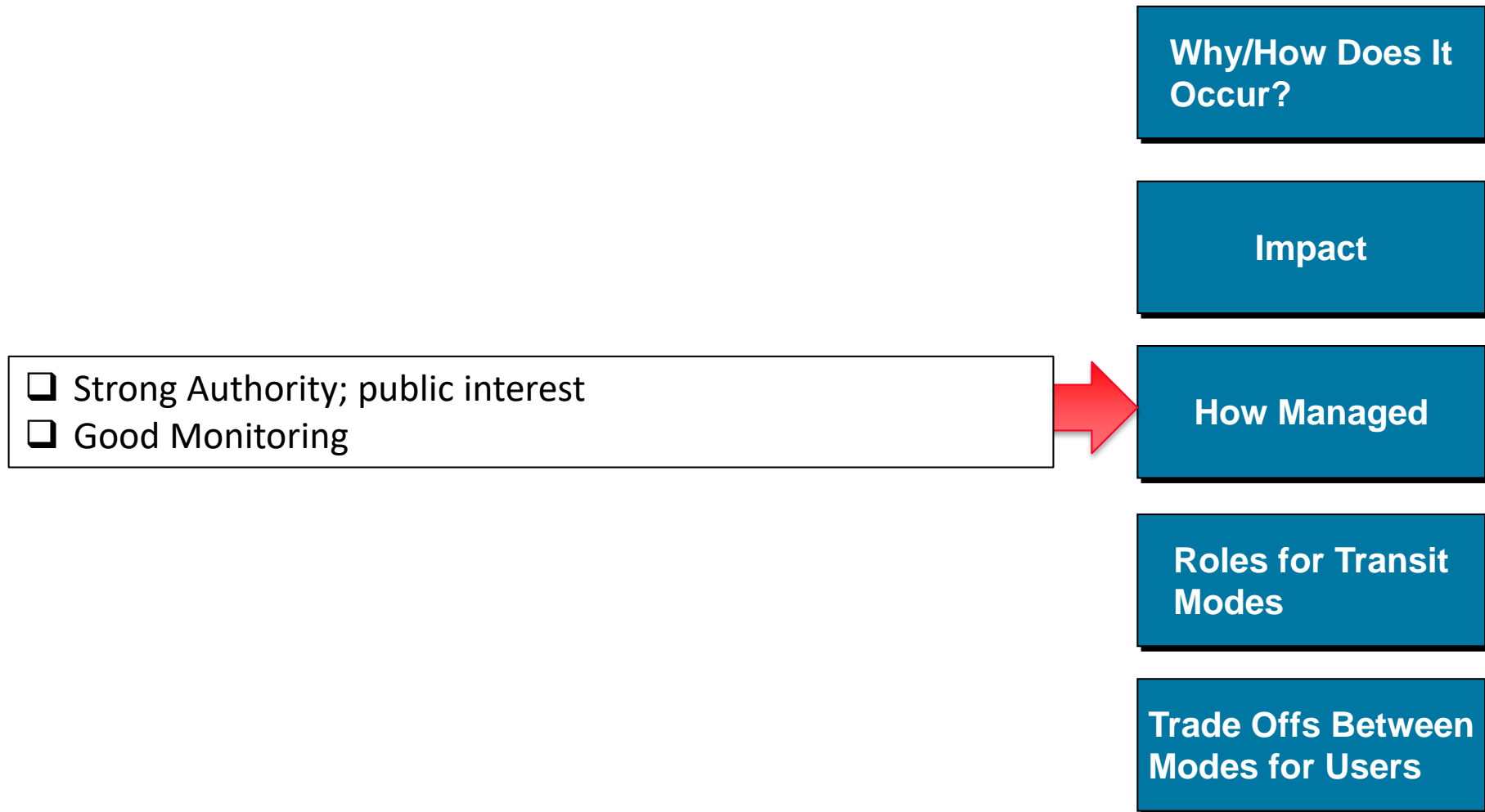
Impact

How Managed

Roles for Transit Modes

Trade Offs Between Modes for Users

Intermodal Public Transport Competition



Intermodal Public Transport Competition

Why/How Does It Occur?

Impact

How Managed

Roles for Transit Modes

Trade Offs Between Modes for Users

- ITS NOT ABOUT THE MODES STUPID!!!!** Its about the user (and wider benefits)
- Some Modes more suited to certain conditions (50K/hr limit, corridor space)



Bus Rapid Transit

Challenges/
Opportunities for
New Modes (e.g.
BRT)



How to Address
Them for User
(Society)
Outcomes

- Institutional Divide (rail bias)
 - Lack of wholistic planning
- BRT “OVER Flexibility”; mode to select to make compromises
- Perception of Non-Permanence/ Land Use benefits
- Bad results in some cases (BRT)
- Lack of Continuous Innovation
- EXCESSIVE SUCCESS** Ridership growth beyond planning capacity

Bus Rapid Transit

**Challenges/
Opportunities for
New Modes (e.g.
BRT)**

**How to Address
Them for User
(Society)
Outcomes**



- Institutions
 - Strong central agency, clear goals, power
 - Stronger evaluation criteria inclusive of wider society impacts
 - Stronger land use/intermodal cooperation/ integration
 - Innovation evolution
- Better technical direction on
 - Flexibility choices
 - Permanence/ land use effects
- Learn from bad as well as good experience
- Understand BRT limit thresholds;
 - bus industry needs to accept rail as needed above thresholds
 - Rail industry needs to see the value of bus as mass transit

Workshop 1 – Research Futures

Intermodal Integration

- Physical integration
- Organisational integration
- Traveller preferences
- Bike access data (behaviors)
- Data integration (ownership)
- Rating and ranking of cities; integration scores idea (UITP)

Intermodal Competition

- More cross elasticity studies in Asia/South America where transit competition is large
- Research national preferences from BRT/LRT – no developing country work (mostly metro/BRT; this needs to be done)
- More research on catchment type; interesting low density long catchment walk evidence
- BRT and Land Use impacts; how service levels not modes affect land value uplift

Bus Rapid Transit

- Integration walking/bikes/;land use beyond PT
- Value uplift for new modes including BRT
- Vehicle design
- Automation opportunities
- Integration of real time and other information
- Control dispatch technologies and new ticketing (phone payment)

THANK YOU

