International Workshop
"Intermodal Connectivity at European Transport Network Points: Why so late?"
COST 340: Working Group 2

Intermodality of Network Points:
The planners view

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Intermodality of Network Points: The planners view

**Dimensions of intermodal network points** (1/2)

**Physical dimension**

- Interconnection points between the infrastructures of the various transport networks

- Structural and technical installations providing access to the networks (platforms, transhipment installations, etc.)
Functional dimension

- Horizontal connection: connection of logical traffic networks
  - on different *modes* of transport (road, rail, water, air)
  - by different *means* of transport (pedestrian, bicycle, car, train, ship, plain)

- Vertical connection: connection of logical transport networks
  - on different *spatial levels* (long-distance, regional, local transports)
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Services at intermodal network points

- Interconnection of transport services
  - Functionally (no transhipment)
  - In time (no waiting)
  - Spatial (no detours)
- Interconnection of transport information
  - Timetables (door-to-door)
  - Travelling and transport information (tracking and tracing)
- Interconnection of booking
  - Ticketing
  - Reservation
  - Check-in
- Special “interconnecting services”
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The current situation (1/3)

Intermodal network points with the road network

- Road network = physical interconnection of all land, water and air transport networks

- Two different types of connections:
  - Direct connection: functional and physical connection of rail, water and air traffic with the road traffic
  - Indirect connections: only functional connection of rail, water and air traffic among themselves without direct physical connection, meaning by the road
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The current situation (2/3)

Intermodal network points in passenger transport systems

- Rail transport
  - long distance train / local tram, bus, car: long transfers outdoor
  - long distance train / regional train, bus: structurally integrated

- Air transport
  - plane / regional and local bus, car: structurally integrated
  - plane / long distance and regional train: mostly not existent
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The current situation (3/3)

Intermodal network points in goods transport

- Integrated intermodal network points: normal case
- Highly structurally integrated
- Capacity problems
- Time consuming
- Personnel intensive
- Safety and quality problems
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**Problems and their reasons** (1/2)

**Superior objective**

- Sustainable Development
  - Use of transport means suited to their strengths
  - Multimodal transport chains
  - Intermodal network points

**Problems**

- Increased (uni-)modal efficiency of transport systems (infrastructure and services)
- Backwardness of intermodal links between transport systems (infrastructure and services)
Reasons

- High complexity of multimodal transport services
- Inadequate integration of the physical and functional aspects of the multimodal transport system
- Inappropriate basic conditions
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**High complexity**

- Multimodality and intermodality: much more complex than unimodality

- Multimodal transport chains
  = complex transport organisation
  - many actors
  - many services

- Intermodal network points:
  - expression of a complex transport organisation
  - prerequisite of a complex transport organisation

- Higher complexity 
  → extra efforts for users and providers
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Extra efforts for the users (1/2)

Multimodal Transport chains:

• different companies for different services on different stages

• need of additional organisation and co-ordination

• need of transfer and transhipment procedures

• higher generalised transport costs
  - loss of time
  - loss of reliability
  - loss of comfort
  - loss of safety
  - higher costs
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Extra efforts for the users (2/2)

Multimodal Transport chains:

• higher generalised transport costs

• less attractive than unimodal transports (modal split)

• less need for intermodal network points
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Extra efforts for the providers (1/2)

Intermodal network points:

• Spatial separation
  - different spatial development criteria of different networks
  - different location criteria for network points

• Separation in time
  - Road network: Romans, middle age, 19./20. century
  - Rail network: 19./20. century
  - Air network: 20. Century

• Separation by companies
  - different companies for different networks
  - different companies for different services
Insufficient basic conditions

- Legal separation
  - Unimodal transport legislation
  - Transport legislation on different government levels

- Institutional separation
  - Unimodal permissions and concessions for operating transport networks and providing transport services
  - Different authorities possibly on different government levels for financing and concession of different transport networks and services
  - Fragmented responsibility for overall multimodal network
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First Conclusion

- Planning, realisation and operating of intermodal network points
  → co-operation of different participants

- co-operation of different participants
  → additional efforts

- additional efforts for users and providers
  → higher costs

- higher costs
  → economic problems in liberalised transport market
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**Solution approach (1/5)**

- Regarding all transport infrastructures and services as parts of one single integrated multimodal transport system

- Planning of intermodal, integrated services instead of optimisation of modal and separated operations
Transport planning

- Concept of an overall multimodal transport system including
  - all modes of passenger and goods transports
  - all transport infrastructures
  - all transport services

- Orientation of the extension (quantitative and qualitative) of transport networks and services of all transport modes on their optimal interconnection

- No simultaneous promotion of unimodal and multimodal transports
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Solution approach (3/5)

Spatial planning

• Securing of suitable locations for intermodal network points

• Securing of suitable routes for transport infrastructures

• In good time

• Within regional development planning
  - land use planning
  - housing and industrial location planning
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Solution approach (4/5)

Overall financing

- Special financing of extra expenditure needed for each intermodal project
- Special financing of extra efforts for multimodal transports chains
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Solution approach (5/5)

Planning policy

• Liberalised transport markets: characterised by operational, i.e. unimodal interests of users and providers

• Increased awareness of the responsibility for the overall multimodal transport system by transport planning and concession authorities
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**Final Conclusion** (1/2)

- Intermodal network points
  = physical and functional connecting points
- Intermodal network points
  = expression and prerequisites for multimodal transport chains
- Multimodality and intermodality
  = more complex than unimodality
- Multimodality and intermodality
  = extra efforts for users and providers
- Multimodality and intermodality
  = less attractive than unimodality
- Multimodal transport chains
  = crucial for a sustainable transport system
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Final Conclusion (2/2)

• Responsibility for an efficient multimodal transport system and especially for intermodal network points  
→ more awareness by public authorities

• Multimodality and intermodality  
→ need of special promotion:  
  - Intermodal network points  
  - Multimodal transport chains  
  - Use of intermodal network points