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.)

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Dimensions of intermodal network points (2/2)

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)

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Problems and their reasons (2/2)

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

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Extra efforts for the providers (2/2)

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

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Solution approach (2/5)

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