


 60th Trafinz Conference
 CELEBRATING THE PAST GEARING UP FOR THE FUTURE
 Christchurch 7 – 10 September 2008

The Role of Technology as Part of an Integrated Transport Strategy

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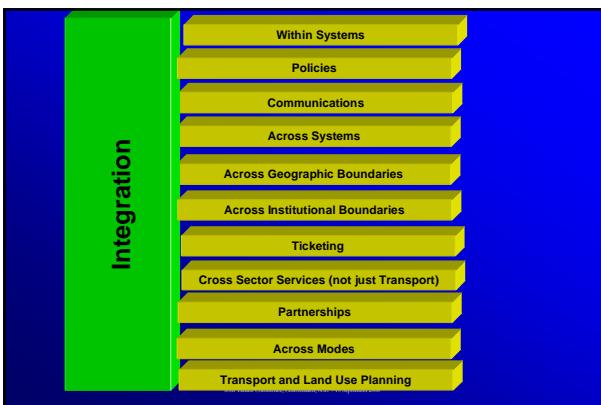


The Role of Technology as part of an Integrated Transport Strategy

Introduction

- Policy background
- Role of integration
- What can technology deliver?
- Summary and conclusions

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Policy Background

- Increasing traffic levels, congestion, emissions, casualties, sustainability have required a review of transport policies
- Interaction with other policies e.g. economy, planning, environmental, social etc
- Technology increasingly featuring in National, Regional and Local Transport Policies
- Technology already has a role to play in delivering transport policy objectives

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What are the mobility challenges?

Overarching Transport Plan policies and objectives:

- reduce the effect & impact of congestion
- promote safety / security
- increase accessibility
- improve air quality
- support wider quality of life issues (social exclusion)
- encourage value for money and efficient asset management
- widen travel choice
- ensure sustainability
- ensure economic vitality

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Increasing emphasis on the integration of different tools to deliver new and enhanced services and facilities.

e.g.

- demand responsive transport
- co-modality
- freight delivery
- personalised & mobile travel services
- road user/congestion charging
- network management / reliability
- measurement and monitoring
- cooperative vehicle / highway systems
- integrated ticketing
- reducing emissions



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Integration Drivers

Transport Policies & Goals

Asset Management


Efficiency Savings

Managing and maintaining the transport network more efficiently and effectively


- Congestion
- Accessibility
- Air Quality
- Road Safety
- Enforcement
- Monitoring
- Network management
- Targets

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Integration Challenge




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Policy Areas



- Congestion
- Safety and security
- Accessibility
- Environment

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Traveller Information











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Network Operations

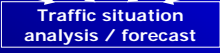
Dynamic measures.....


accidents







congestion


road works


events



.... to remove and reduce traffic problems

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Demand Management

- ITS key to delivering, monitoring and enforcement of congestion charging / tolling
- Access controls
- Selective vehicle access/priority








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Inter-urban Routes





Controlled Motorway



Tolling



VMS



Ramp Metering



Active Traffic Management

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Road & Vehicle Safety








- ❑ Intelligent Speed Adaptation (ISA)
- ❑ Lane keeping
- ❑ In-vehicle collision avoidance
- ❑ eCall
- ❑ Enforcement cameras
- ❑ Advanced warning signs
- ❑ Speed indication devices
- ❑ Overheight vehicle detection
- ❑ Weigh in motion (overloaded lorries)

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Safety & Security

- ❑ Automatic number plate recognition (ANPR)
- ❑ CCTV
- ❑ Image processing
- ❑ Sharing of systems / information between organisations
- ❑ Management of incidents



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Incident and Hazard Management



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Accessibility


- ❑ Multi modal travel planning information
- ❑ Public transport information
- ❑ Demand responsive public transport services
- ❑ Integrated ticketing / smart cards

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Smart Cards: Integrated Access Rights

- ❑ Smart cards can contain rights of access or use to many transport modes on single card.
- ❑ Can also provide access to other services.
- ❑ Research showed public want smart cards to replace small-value payments:
 - ❑ Buses, car parking, toll bridges, ferries.
- ❑ ITSO provides interoperable ticketing specification with high levels of security.
- ❑ Operators benefit as well as users:
 - ❑ Less cash-handling, fraud, maintenance;
 - ❑ Improved staff security, boarding time, marketing.



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Mobile Information Services

Environment

- Biggest technological impact will come from vehicle developments & renewable fuels
- Congestion management / modal shift / teleworking
- Measure general / vehicle emissions
 - Introduce strategies
 - Target high polluting vehicles
 - Enable access for low polluting vehicles

Integrated Network Operations

Issues - challenges

- Levels of service
- Economic performance
- Increasing demand
- Rising public expectations
- Safe, reliable journeys
- Standards & procurement
- Inter-modal connections
- Air quality and environmental impact

Freight & Logistics

Freight Management

- Vehicle and Consignment tracking
- Hazardous goods tracking
- Quality assurance of freight (temperature, pressure, physical protection)
- Protection of goods during transport against damage, loss etc.
- Geo-fencing (time, route, place of load, date of delivery etc.)
- Influencing of routing, date of delivery during transport process
- Lorry road user charging
- Overweight (Weigh in motion)

Freight & Logistics

Technology can integrate a large number of players and their requirements

Public Transport Management "Delivering a BIASed Future for Glasgow"

Road Network Information

Data Sources:

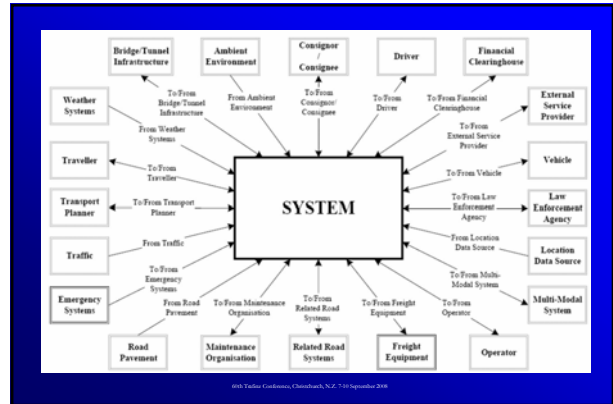
- ❑ Detectors
- ❑ Floating car data
 - ❑ GPS - ITIS
 - ❑ Mobile phone
- ❑ Automatic number plate recognition (ANPR)
- ❑ CCTV
- ❑ Probe vehicles
- ❑ Trafficmaster
- ❑ Real Time Bus Passenger Information (RTI)



Cooperation between
vehicle and infrastructure
(CVHS)



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Conclusions

- ❑ The role and importance of ITS within an integrated transport strategy has strengthened and is now well established and the role will continue to become more important.
- ❑ Technology can help deliver many of the policy objectives and goals
- ❑ ITS can:
 - ❑ provide the flexibility in delivering policies, objectives and services
 - ❑ be used to complement or enhance traditional transport facilities
 - ❑ manage demand and make the best use of the existing assets and infrastructure
 - ❑ provide a cost effective solution compared to road building or major infrastructure provision
- ❑ Integration and cooperation can enable more effective ITS services to be delivered and can achieve significant synergy

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Top priorities (Europe)

- ❑ Real-time Traffic and Travel Information
- ❑ Freight information systems
- ❑ eCall
- ❑ Electronic toll collection and payment
- ❑ Traffic demand management
- ❑ Open in-vehicle telematics platform
- ❑ In addition:
 - ❑ Hazardous goods tracking
 - ❑ Cooperative systems
 - ❑ eSafety systems

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