Intelligent Transport System for Republic of Serbia

Introduction and Benefits of Intelligent Transport Systems (ITS)

ITS Mini - Workshop
Belgrade, 3 April 2009

What is ITS?

ITS can be defined as:

- the application of **advanced technologies** (computers, sensors, control, communications and electronic devices) in **transportation** to save **lives, time, money, energy and the environment**
- A **tool** to help us do our jobs better !
- Not an end in itself !

Why do we need ITS?

- Improve safety
- Increase operational efficiencies
- Reduce energy and environmental impacts
- Enhance productivity and competitiveness
- Improve collection of data
- Enhance mobility
- Create opportunities for the ITS industry

What can ITS do?

Major Areas of ITS

- Traffic management
- Public transport
- Traveller information
- Electronic payment
- Road Weather Information
- Commercial vehicles
- Emergency management
- Vehicle control & safety
- Information Warehousing

Traffic Management

- Traffic Control
- Incident Management
- Travel Demand Management
- Operations & Maintenance
- Environmental Conditions Monitoring
- Automated Dynamic Warning & Enforcement
- Non-Vehicular Road User Safety

Benefits of ITS to Users

- Alleviate Traffic Congestion
- Enhance Productivity and Operational Efficiency
- Enable Environmental Monitoring and Protection
- Provide Comfort, Convenience and Security

Who Benefits?

- The travelling public
- Business / Industry
- Government agencies
- Transport operators
- The community / environment

Measured Benefits

Traffic Management Systems

- Significant installed base in North America
  - RESCU / COMPASS, Toronto
  - INFORM, New York
- Increases in throughput up to 25%
  - Equivalent to adding 1 lane to 4 lane section
- Travel time reductions up to 25%

Measured Benefits

- Reduced the duration of incidents from 86 to 30 minutes
- Reduced overall delay by 5.3 million vehicle-hours per year and fuel usage by 11.3 million litres per year
- By displaying incident messages when incidents occur, approximately 200 accidents are prevented per year
- Reduced emissions by 3,100 tonnes per year
- Saves commercial vehicle operators $55 million annually

Toronto's COMPASS Freeway Traffic Management System

Measured Benefits

Public Transport

- Kansas City Automated Vehicle Location
  - 12% increase in on-time performance
  - US$400k annual operating savings

Electronic Payment

- New York City Transit Electronic Fare Payment
  - Annual revenue increased US$49M

Measured Benefits

Traveller Information

- Orlando
  - 19% decrease in travel time
  - 12% decrease in fuel consumption & emissions

Commercial Vehicle Operations

- Oslo Taxi Automated Vehicle Location and Dispatch
  - 2-year payback from improved operating efficiency

Benefits

ITS Area	Typical Benefit–Cost Ratio
Traveller Information	2:1
Traffic Management	7:1
Public Transport	2:1
Electronic Payment	6:1
Commercial Vehicle Operations	6:1

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Suggested Planning Procedures for Implementation of Intelligent Transport Systems (ITS)

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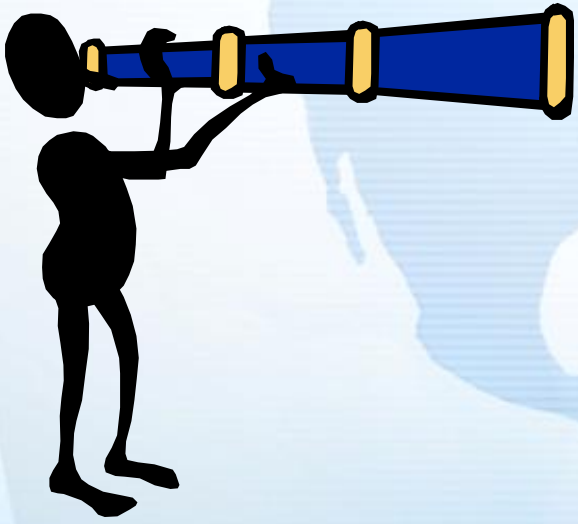
ITS Strategic Planning Process

Failing to Plan

is

Planning to Fail



Why plan strategically?

An ITS Strategic Plan is a **roadmap**

- It sets the **direction**, **pace** and **priorities** of investments over a relatively long term period in a **coordinated** and **focused** manner
- It clearly defines the **ultimate goal** and the **steps** required to achieve it

Why an ITS Strategic Plan?

- Get the most for our ITS dollars
- Separate the **what** from the **how**
- Anticipate **challenges**
- Ensure system **integration**
- Develop **new tools** for solving transportation problems

ITS Planning Considerations

- Needs and Objectives
- Technology Selection
- Financial Arrangement
- Institutional Framework
- Legislative Framework
- Social Implications
- Marketing and Outreach

6-Step Process

1. How will the stakeholders be involved?
2. What are the possible applications of ITS solutions?
3. What are the obstacles and opportunities to ITS?
4. What do the ITS systems need to do?
5. What is the overall framework of our ITS infrastructure?
6. What does the deployment schedule look like?

Needs Assessment - Process

1. Review of previous studies and documents
2. Stakeholder consultation
    - Interviews
    - Workshop(?)
3. Needs analysis
4. Legacy systems inventory
5. Identification of ITS functional areas

ITS Opportunities

- Upcoming ITS Initiatives
- Technology penetration & momentum
- Funding opportunities (EU)
- Partnership opportunities
- Low legacy systems concerns
- Overall growth prospects (country, transport sector, other industries / sectors)

ITS Deployment Challenges

- Stakeholders perspectives
- Coordination with key municipal agencies
- Balancing technical and institutional elements
- Needs vs. technology
- Opportunities / constrains of legal system
- “Users” vs. “Operators” needs and perspectives
- Cost / Benefits and funding of applications
- Public / political acceptance

Workshop Outcomes

- Steering committee consideration / suggestion
- Potential investigation / list of interested stakeholders
- Preliminary investigation of municipal and metropolitan authorities involvement in planning / deployment of future Serbian ITS
- Preliminary investigation of funding needs, tools and potential partnership opportunities
- Preliminary list of user requirements, short terms and long – ultimate objective
- Pilot preliminary design – project exercise for limited deployment of ITS, say traffic management system

Some of the Preliminary Steps (...observations...)

- Training of the Project Steering Committee, determine Support Team and Technical Team (workshops, direct training, seminars, case studies, round-tables…)
- Assessment of Existing Situation in Serbia in regards to available Data-sources, systems and processes.
- Review of successfully designed - implemented ITS and/or GIS in EU member states and other developed counters – surroundings
- Development of Framework for the Introduction of Intelligent Transportation System in Republic of Serbia
- Proposed Intelligent Transportation System Inventory, short and ultimate objectives, deployment strategy and potential staging

Pilot Project (...suggestion...)

- Design and Implementation of Intelligent Transportation System for:

Belgrade Ring Road

- Preliminary feasibility study with Inventory of proposed ITS : traffic management, vehicle control and safety, public transport, traveller information, electronic payment (potentially), commercial vehicles, emergency management, road weather information, information warehousing…)
- Staged deployment - first stage already constructed section, the second -ultimate stage upon completion (..underground provisions..)
- Defining the roles, funding strategy development, major players identification, teaming…based on the previous experience (..pending of the ITS scope..), the investment value is at the level of 2.3 to 2.5 mill Euros, in total

Pilot Project – Major Benefits (..some..)

- Huge, already mentioned benefits to the motorists and traveling public (domestic and international)
- Significant increase in traffic safety – reduction in traffic accidents, overall number and severity.
- Putting Serbia on the ITS map in the Region and EU.
- Becoming knowledgeable, experienced and responsible owners of the road system
- Attraction of alternatives funding opportunities 9once in place – interested parties will show up, EU Banks, World bank, Development and aid funds, contractors….)
- Opportunity of ITS - associated industry and development manufacturers, employments, public awareness….
- Relatively low risk, start – up investment / capital

Thank you!

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