2016 Annual Conference & Innovation Awards

Brussels, Wednesday 3 February 2016
Opening Plenary

Smart Transportation Infrastructures Connecting People and Businesses Across the World

2016 STA ANNUAL CONFERENCE & INNOVATION AWARDS
KEYNOTE ADDRESS

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Smart finance for smart infrastructures?
Inefficient situations to be avoided

Congestion, accidents, insecurity, contamination, lack of information...
Intelligent Transportation Systems
(a definition)

Intelligent transportation systems (ITS) are advanced applications which, without embodying intelligence as such, aim to provide innovative services relating to different modes of transport and traffic management and enable various users to be better informed and make safer, more coordinated, and 'smarter' use of transport networks.

Although ITS may refer to all modes of transport, EU Directive 2010/40/EU (7 July 2010) defines ITS as systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport.
Intelligent Transportation Systems

Research, development and international standards

Smart infrastructures and operators

Sensors, data processing and information dissemination

Smart vehicles and interactions

Car manufacturers applications

Smart costumers

Intelligent drivers, intelligent users

ITS Components
Human intelligence, is the mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one’s environment.

An intelligent person has the ability to think, understand, and learn things quickly and well; while an intelligent artificial system has the capability of operating as if by human intelligence by using automatic computer control.
ITS Functioning Principle

Input data

Simulation and forecasts model → Optimization process

External interferences

Management strategy

Control system

Monitoring (key performance indicators)

Results and reports

Operative parameters

Supervision procedures
Improving safety and reducing congestion requires more efficient management of the roadway system. Therefore, smart systems and infrastructure need to be adaptable to varying demands and conditions, including developing technology.

Vehicle-highway Information exchange is the key to improved management and operation of the transportation network. This capability could provide valuable information on traffic conditions, crashes, adverse weather and road conditions, etc.

However, according to the Royal Academy of Engineering (UK):

“Transport being Smart does not necessarily solve all problems because the infrastructure operators have no control over when people want to use the network smartness needs to reach user level”
A smart city uses digital technologies or information and communication technologies (ICT) to enhance quality and performance of urban services, to reduce costs and resource consumption, and to engage more effectively and actively with its citizens. Sectors that have been developing smart city technology include government services, transport and traffic management, energy, health care, water and waste. Smart city applications are developed with the goal of improving the management of urban flows and allowing for real time responses to challenges. A smart city may therefore be more prepared to respond to challenges than one with a simple 'transactional' relationship with its citizens.

A new paradigm: full interconnection and big data processing
Everything in a package

Where the role/implication of the user is fundamental
A Conclusive Message

Efficient adaption to actual demand, highest quality of service and user’s intelligent behavior are the only ways for efficiently managing infrastructures.
What can the EIB do in this context?

After project implementation, the EIB does not finance operation nor regular maintenance costs.

However, the EIB can finance investments aiming at the improvement of the road conditions, notably in terms of Road Safety and actions fighting against the effects of Climate Change.
FOCUSING ON KEY PRIORITIES

ENVIRONMENT
EUR 19.6bn

INFRASTRUCTURE
EUR 18.9bn

INNOVATION
EUR 18.7bn

SME
EUR 29.2bn
DELIVERING IMPACT WHERE IT’S NEEDED

- **JOBS**: 4.1m jobs in small businesses
- **HEALTH**: 9.8m people with access to improved health services
- **EDUCATION**: 1.5m students benefiting from EIB projects
- **WATER**: 21m people benefiting from safe drinking water
- **TRANSPORT**: 380m additional passengers
- **ENERGY**: 2.3m households powered by EIB projects
- **URBAN**: 3.2m people benefiting from urban upgrades
- **DIGITAL**: 15.3m people with new or upgraded connections
A practical example:
the EIB Road Safety Action Plan

EIB’s Transport Lending Policy (CA/452/11):
“Projects on the TEN-T shall be subject to a road safety audit or inspection in line with the Road Infrastructure Safety Management Directive 2008/96/EC (plus the Tunnel Safety Directive 2004/54/EC where applicable). Outside the TEN-T, safety audits or inspections shall also be performed in line with Directives”.

Derived goals:
1. Mainstream road safety in EIB road infrastructure operations
2. Scale up existing EIB lending, blending and advising activities in of road safety improvement projects
3. Improve monitoring of road safety impacts of the EIB projects.
Banks functioning principle

Rating agencies → Borrowing strategy → Project appraisal and risks assessment → Transformation costs → Ex-post evaluation → Repayment (with interest) → Loans

Mandates and business plans → Capital markets → loans → Return on investment

Rating agencies
A project assessment with many facets

EIB project requirements: the « three pillars »

Quality and contribution to sustainable growth & employment (viability)

Contribution to EU policy (eligibility)

EIB contribution (added value)

Comply with procurement and environmental protection regulations

A project assessment with many facets
Due diligence: technical appraisal

- Scope of works
- Feasible solutions
- Procurement
- Sound unit costs
- Components balance
- Cost contingencies
- Implementation plan
- Project management
- Production
- O&M annual costs
- Revenues stream
- Operational ratio
- Tariffs structure
- Subsidies sources
- Environment/social impact and surveillance
The main goal is to help to catalyse investment

<table>
<thead>
<tr>
<th>LENDING</th>
<th>BLENDING</th>
<th>ADVISING</th>
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<tbody>
<tr>
<td>Loans (individual, multi-sector, multi-component projects)</td>
<td>Combining EIB finance with EU budget (SPL projects) (Project Bond Initiative)</td>
<td>Advisory Services:</td>
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<td>But also: Guarantees (trade financing)</td>
<td>Higher risk projects for innovation (RSFF) and Youth Employment</td>
<td>Prepare &amp; implement projects (JASPERS)</td>
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<td>Equity participation (investment funds)</td>
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<td>Independent Quality Review</td>
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Attracting FUNDING for long-term growth
Financing infrastructure projects at the EIB

- The EIB often takes construction risk. Inability of the promoter to pay the loan back would represent a loss to the Bank.

- Process of loan pricing:
  - Costs and schedule of the project (PJ)
  - Financial cash-flow model (Ops)
  - Expected loss
  - Pricing of the loan (Ops)
A strong response to the crisis
European Fund for Strategic Investments

- Additional funding foreseen
- ‘Advisory window’ deployed through EIB
- ‘Infrastructure and innovation window’ deployed through EIB
- ‘SME window’ deployed through EIF
- Possible other public and private contributions

- EU guarantee
  - EUR 16 bn*
- European Fund for Strategic Investments
  - EUR 21 bn (initially)
- Long-term investments
  - circa EUR 240 bn
- SMEs and mid-cap firms
  - circa EUR 75 bn

Total extra over 2015-17:
- circa EUR 315 bn**
Projects require full appraisal, as other projects financed by EIB
Forecast: EUR 15-20 bn /year, on top of existing pipeline (depending on risk profiles)
Greater ability to handle risky operations
Increasing importance of loans, guarantees and participation in equity to leverage private sector investment
Continued importance of EU structural and other funds
Key role of member state authorities, as well as private sector and SME stakeholders
Eligibility criteria to be enlarged
EUROPEAN FUND FOR STRATEGIC INVESTMENT IN 2015

**EIB**
- 42 Projects
- EUR 5.7bn
- EUR 25bn

**EIF**
- 84 Operations
- EUR 1.8bn
- EUR 25bn
Thank you

The EIB is the EU instrument for lending, blending and providing technical advice to finance sustainable solutions ITS

www.eib.org