



***“Implementing Transport research:
experience and examples from Greece and
other countries”***

*Inland Transport Committee
Working Party on Transport Trends and Economics (WP.5)
Workshop on “Transport Research and Innovations”
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Research results by themselves are of little societal use ...





PART I

BASIC DEFINITIONS AND REALISATIONS FROM EXISTING EXPERIENCE

(Starting with some ... conclusions !)

PART II: *EXAMPLES OF RESEARCH IMPLEMENTATION CASE
STUDIES*

PART III: *THE ISSUE OF INTELLECTUAL PROPERTY RIGHTS*



*If we want to transform “knowledge”
to societal benefits ...*

*... we must consistently work towards
supporting and promoting the production of
“Innovation”*

*Innovation = Market induced,
implementation of research results.*

*Research is about transforming
money to knowledge !*

*Innovation is about transforming
Knowledge to money !!*

... One key question ...

*Do the billions spent on research, create
“innovation” at a level that corresponds to
the level of the committed research funds
?*

My answer is: in general, NO!

*We tend to produce good and, at cases
even, transformative research results,*

BUT

*we fail to attract sufficient “market
interest” on them.*

The key factor of failure, is ...

...the breakdown, or inefficient operation, of the Triple Helix Model:



Government: Political-will and leadership / strategic planning, / rules setting and monitoring compliance (*simple, not bureaucratic, rules obeyed by all*)

Industry / Business: Foreword-looking vision and sensing of future market demands / “Guiding” research to areas that will satisfy market demands / Willingness to commit resources and cooperate with the research community towards more focused research on innovative products or services.

Research community: Production of knowledge, technologies, and other research products or services that meet societal needs, in alignment and cooperation with the industry - business – market.

Areas of failure (or inefficient working) of the triple helix model !

- A. Insufficient funding for research implementation (post project activities).**
- B. Blared or non-existent “implementation environment” - no research implementation strategies at national level.**
- C. Lack of generally tested and accepted governance structures for the implementation process (for coordination among stakeholders, centralization of supporting functions, one-stop-shop operations, etc).**
- D. Lack of monitoring and systematic data collection for implementation process analysis and evaluation.**

Primary conditions of success:

- A. Understanding of “who’s in charge” and who takes the initiative;***
- B. Sufficient financial, and other, support for initial implementation steps (valley of death);***
- C. Participation of the appropriate stakeholders in all phases of the implementation process;***
- D. Early and continuous communication among all relevant stakeholders;***
- E. Appropriate governance and implementation capacity.***

view

- **Difficulty to gain from the implementation experience of others:** Experience and results from research implementation is not published in peer reviewed articles, because of patent requirements, or commercial considerations, or due to pressures of timescales for exploitation
- **Difficulty to “satisfy” and conform to two key stakeholders:** The sponsor of the research, and the “owner” of the practical problem where research results apply (usually the trace between the two is lost)
- **Incompatibility of the traditional measures of research output in measuring “innovation” .**
 - **Indicative problems:**
 - Citations measure the interest of the research community – not the market;
 - Patents are not used in most of the knowledge industries;
 - Most SMEs do not file for patents.



*PART I: DEFINITIONS AND REALIZATIONS FROM EXISTING
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PART II

EXAMPLES OF RESEARCH IMPLEMENTATION CASE STUDIES

PART III: THE ISSUE OF INTELLECTUAL PROPERTY RIGHTS

1) Thessaloniki's Urban Mobility Platform

Implementing research through public funding and collaboration of all relevant stakeholders



Public kiosks

Web on line services



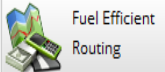
Personnel based tutorials -help desks- Mobile phones

The Web on line Mobility Center: *www.mobithess.gr*

e-Services



Environmental Routing



Fuel Efficient Routing



Bus Routing



Car Routing



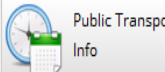
Combined Routing



Car Sharing



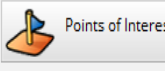
Traffic Info



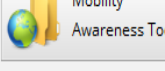
Public Transport Info



Environmental Info



Points of Interest



Mobility Awareness Tool



Thessaloniki's Intelligent Urban Mobility Management System

Thessaloniki's Intelligent Urban Mobility Management System is a unified effort of the key players of the city dealing with urban mobility, transport and environment.

the intelligent system



The system aims, through the services provided, to help travelers move around the city easily avoiding the traffic congested areas and also to raise the environmental public consciousness and to promote public transportation and alternative ways of transport (walking, cycling).

At the same time, through intelligent traffic management and control in the central area of Thessaloniki, the system aims to reduce the negative influence of the gaseous pollutants. The direct involvement of citizens in planning their trips will give them the right and the opportunity to actively contribute to the improvement of the environmental quality of the city.

Finally, through special urban mobility training programs that the system provides, a new culture for urban mobility is formed in the city.

The Intelligent system is divided into two separate service Centers which act complementary and parallel:

- The Center for Urban Mobility
- The Traffic Control Center

tv spot

mobility awareness tool



aims of the intelligent system for the citizens

understanding of sustainable urban mobility



Mobility Planning Services

Car Routing: Private car routing based on the fastest or the shortest route. The total travel time is being estimated using real time traffic conditions of the road network of the city.

Environmentally Friendly Routing: Provision of the route in which the traveler is less exposed to environmental pollutants using his/her private car and also the most fuel efficient route based on the minimization of the fuel consumption.

Trip Routing using Public Transport Means: Provision of the most optimal route using the public transport means of the city of Thessaloniki.

Combined Transport Routing: Provision of optimal routing combining the use of private car and Public Transport in different legs of the same trip. This service is dedicated for trips originated from outside areas of the Thessaloniki agglomeration region and at central urban areas. The final solutions consist of a car routing trip leg from trip origin to a bus terminal that provides parking slots and a public transport trip leg from the terminal to the final destination.

Pedestrian Routing: Routing based on the shortest and safest route for on foot trips.

Traveller Information Services

Traffic condition of the road network: Information concerning real time traffic conditions of the road network.

Thessaloniki Urban Mobility Platform

Services offered

The Urban Mobility Center

Optimal Routing Services: Based on criteria and modes defined by the traveler (Public Transport Routing / Private Car Routing for fastest, shortest, most environmentally friendly, and most cost efficient route / Combined Transport / Walking / Shared vehicle).

Traveler information Services: For info on:

- Real time traffic conditions and estimation of the traffic condition within the day
- Daily Air quality conditions
- Points of Interest.
- Public Transport Information related to bus routes and timetables as well as bus stop areas..
- **Sustainable Mobility awareness services:**

The center offers tutorials in order to learn and become familiar with the concept of Sustainable Urban Mobility, including testing and evaluating the knowledge gained.



Intelligent Transportation Systems

The Traffic Control Center:

1. Incident Management using real-time information.
2. Dynamic estimate (forecast) of traffic conditions
3. Assessment and validation of the predicted travel time.
4. 'Strategic' dynamic management of traffic lights to reduce the environmental impact.
5. Impact evaluation of the dynamic management.

The Traffic Control Center operates under the responsibility of the Region of Central Macedonia (RCM). The traffic control center, is focused on the adaptation of traffic light programs on real time conditions, and completes and expands the capabilities of the existing infrastructure of the RCM.

Governance and implementation structure

Research producing Organisation: *Hellenic Institute of Transport (HIT) - Center for Research and Technology Hellas (CERTH). Research on intelligent environmental traffic control algorithms, on-line data collection, etc)*



Implementing structure (governance & application)

Project consortium –
Implementation management

Industrial partners installation /
operation

1) Hellenic Institute of Transport



(Technical coordinator)

2) Region of Central Macedonia



(Project coordinator and leader)

3) Municipality of Thessaloniki



4) Thessaloniki Public Transport Authority THEPTA



5) Athens Observatory



6) Norway's Institute of Economics



info trip

Intelligent Transportation Systems

swarco

Implementation Funding:

50%

Ministry of National Economy



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΟΙΚΟΝΟΜΙΑΣ
ΑΝΑΠΤΥΞΗΣ & ΤΟΥΡΙΣΜΟΥ

50 %

ICELAND
LEICHTENSTEIN
NORWAY
eea grants **norway grants**

2) The MLS Destinator

Implementing Research through direct collaboration of industrial and research stakeholders

The product:

A dynamic routing algorithm for the calculation of shortest routes in a road network taking into account the current, or short term future, traffic conditions.

Research producing Organisation: *Hellenic Institute of Transport (HIT). Research on dynamic route finding algorithms with real time traffic data and intelligent short term traffic predictions.*

Implementing structure: *Bilateral contract between*

1) The MLS industrial IT company



2) The Hellenic Institute of Transport

 **MLS**
Making Life Simple

3) The FRETIS Container Terminal Operation Platform



The product:

An operational package of dynamic container Terminal management – monitoring – invoicing platform that is currently available on the market with the commercial name FRETIS.

Initial research producing Organisation:

Aristotle University of Thessaloniki (AUTH)

Implementation case:

Mixed collaboration and funding between public and private stakeholders

The FRETIS implementation structure

Implementation sequence:

- a) Collaboration over a number of years and funding mechanisms between the initial research producing Org (AUTH) and a number of other interested research, consulting, and operating Organisations.
- b) Application of the prototype research product on an experimental basis (Ports of Thessaloniki Greece, Port of Ningbo China).
- B) Full application on a daily operational basis at the Ports of Thessaloniki and Igoumenitsa Greece.

1) TREDIT SA
Consultants



4) Port of Thessaloniki



C) IPR transfer and commercialization



2) Hellenic Institute of
Transport

5) Port of Igoumenitsa



3) Port of Ningbo, China



6) Shipping agents and
other



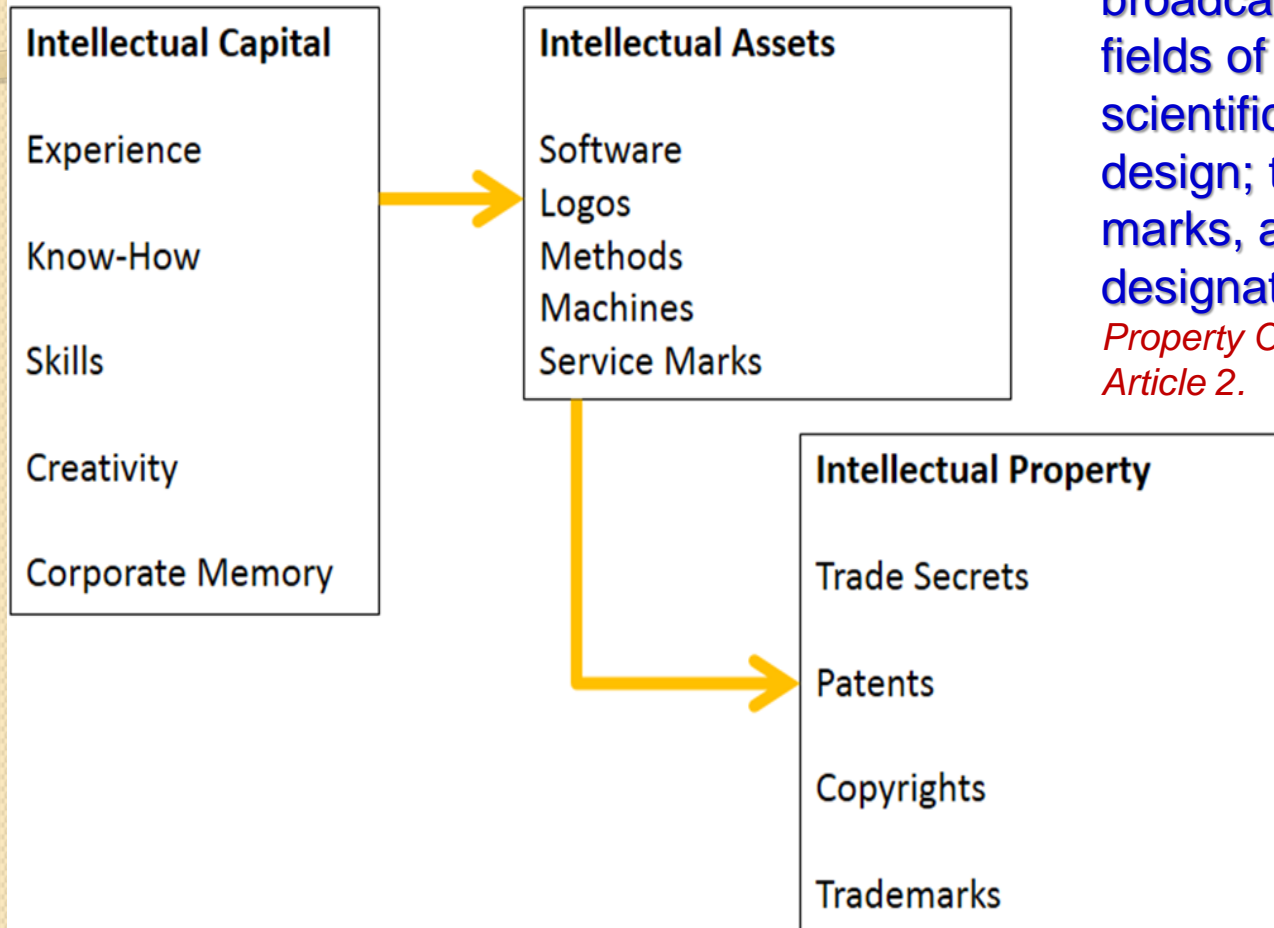
*PART I: DEFINITIONS AND REALIZATIONS FROM EXISTING
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PART III

A NOTE ON THE ISSUE OF INTELLECTUAL PROPERTY RIGHTS

Origins and types of Intellectual Property



IPR process applicable to all fields and types of activity.

Literary, artistic, and scientific works, performances of performing artist, and broadcasts; inventions in all fields of human endeavor; scientific discoveries; industrial design; trademarks, service marks, and commercial names designations. *World Intellectual Property Organization (WIPO), 1967, Article 2.*

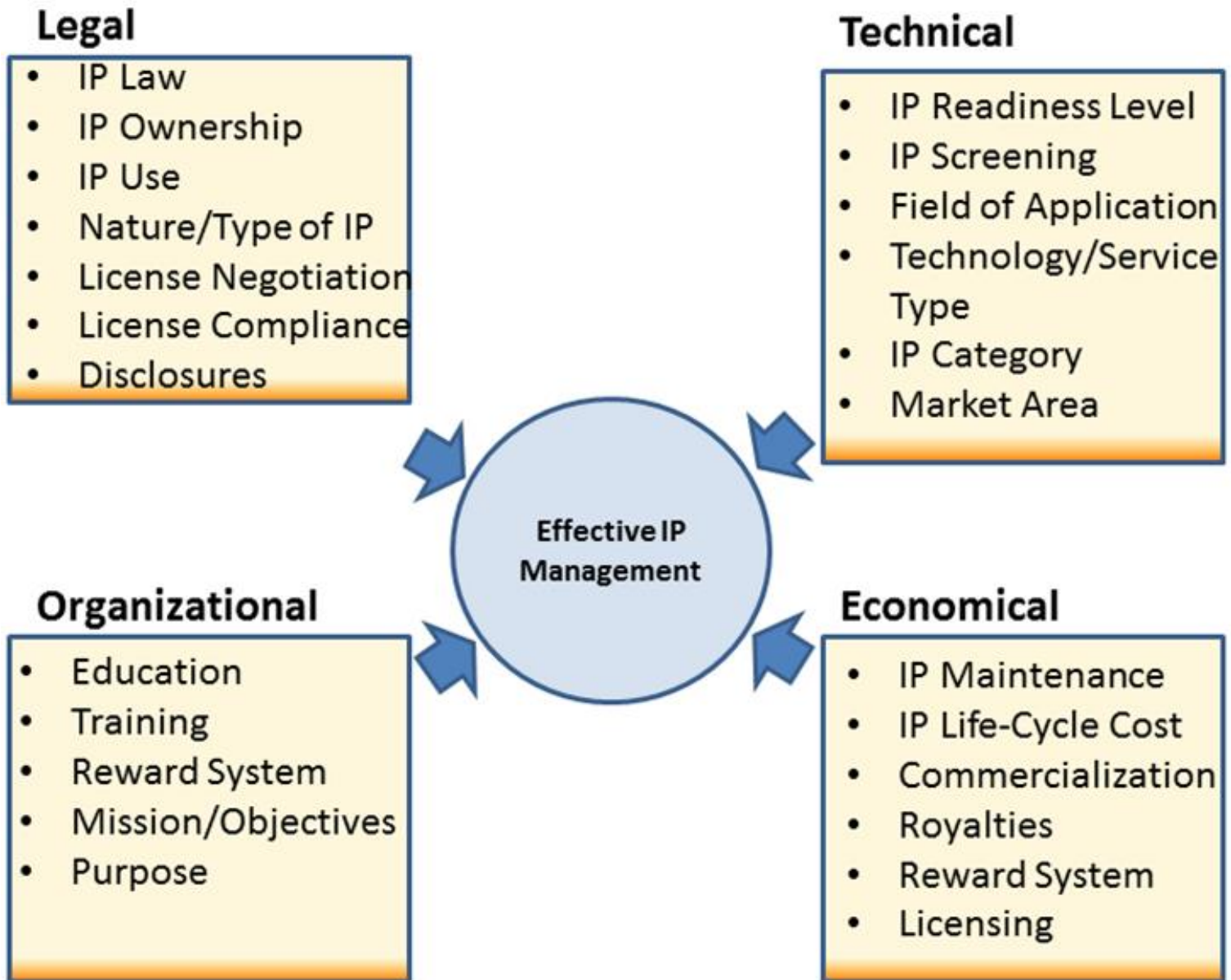
Definition of IPR

IPR is the *legally binding rights* given to person(s) in regards to their creation.

- The creator typically owns an *exclusive right* over the use of his/her creation for a certain period of time.
- This right is recognized by an IPR.
- The creator may *authorize the use* of his creation rights by others or may *transfer the ownership* of those rights to others.

(World Intellectual Property Organization [WIPO])

IPR Management: the realization of value through strategic and tactical actions embedded in intellectual property rights (IPRs). **Key issues:**



Today, the issues of IPR:

- *Are hardly considered by researchers at the beginning of a research project;*
- *Are far too expensive to be handled properly by small and medium sized research organizations;*
- *Form a dis-incentive to young academics as they usually restrict their freedom to publish their research work;*
- *Are difficult to handle and manage in the (usual) case of performing the research as part of a large research consortium (the EU's research contracts provide in Annex special provisions for IPR but these have to be complemented by further action at the end of a research project something not usually done due to lack of funding);*
- *Are not widely known and require hands-on experience which in many cases makes it necessary to hire expensive outside professional assistance.*



THANK YOU !!



BACK UP SLIDES

Promoting Transport innovation in the EU's H2020 framework

- ❑ A number of EU reports (e.g. COM(2012) 501: *Research and innovation for Europe's future mobility: Developing a European transport-technology strategy*) as well as EU funded research projects have addressed the issue of innovation production in the Transport sector. Two of the EU funded research projects resulted in:
 - ❖ The **Transport Research & Innovation Portal (TRIP)**, formerly known as the Transport Research Knowledge Centre (TRKC). This is the one single portal for information on all transport research and innovation conducted at EU and national levels. All information is categorized by transport mode and sector.
 - ❖ The **TIDE Transferability handbook**. This is a practitioners' guide to analyzing the transferability of innovative urban transport measures. It contains information on:
 - ✓ *Selection of Innovative Concepts and Cities* (delineated as "Champion Cities" to receive assistance on implementation scenarios).
 - ✓ *Transferability analysis and guidelines for implementers.*
 - ✓ *Implementation scenarios and preparation of take-up actions.*
 - ✓ *Training and exchange of results of the transferability analysis.*
 - ✓ *Analysis of added value and recommendations.*
- ❑ A more comprehensive list of relevant publications can be found in a 2015 article in [Transport Policy - Volume 4](#), August 2015, Pages 86–93): "*Innovation in the European transport sector: A review*" (Authors: [Tobias Wiesenthal](#), [Ana Condeço-Melhorado](#), [Guillaume Leduc](#)).