The Development of the Greek Road network via PPP’s and the Future Challenges

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The Global Market of Transport Infrastructure

- Strong growth in the transport sector due to Motorization and Urbanization,
- Global capital investment in public and private transport is between $1.4 trillion and $2.1 trillion annually (1.7 $trn in 2016)
- 7% annual growth through 2025 (World Bank).

The public sector turns to private investment due to:
- Operational expertise,
- Financial capacity
- Efficiency

Source: Oxford Economics
The European PPP projects for Transport Infrastructure

Total value of projects: 205 EUR bn – 35% for Motorways

Evolution of the PPP market by year / Transport

Source: European PPP Expertise Centre
The Greek PPP projects for Transport Infrastructure

Total value of projects: 13.8 EUR bn – 55% for Motorways

Source: European PPP Expertise Centre
The 1st Generation of concessions (Greenfields) included the development of Attiki Odos and Rion-Antirrion Bridge (cost 2,1 billion €)
The Greek PPP market for Road Infrastructure

The 2nd Generation of concessions (Brownfields & Greenfields) included the development of

- Athens-Korinthos-Patra
- Athens-Skarfeia & Antirion -Ioannina,
- Skarfeia-Raches & E65,
- Maliakos-Kleidi
- Korinthos-Tripoli-Kalamata/Sparti

(cost 8,5 billion €)
The crisis affected severely the concessions:

- Traffic & Revenue were in some cases down by 40%!
- The viability of the 1st Generation projects has not affected but the Concessionaire “returns” were dramatically reduced.
- The 2nd Generation project development was postponed for almost 3 years.
- A renegotiation (reset) was necessary, in order to reactivate the projects.
The “Reset” procedure of the 2nd generation projects highlighted the issues that PPP projects face in uncertain times:

- No flexibility to accommodate unforeseen scenarios, leading to financial difficulties and contract disputes, with little or no room for resolution.

- Unchartered ground on Risk Allocation between State and Contractors

- The difficulty of governments to commit to future policy

Source: European PPP Expertise Centre
Which risks should be borne by which side?

Most of the following issues (risks) have been addressed during the Greek PPP contract renegotiations:

- Changing economy (Demand reduction, GDP reduction, Country rating, etc.)
- Political issues (Toll price Level, support of specific user groups)
- Social or environmental adjustments
- Changing technology
- Implementation issues (expropriations, time delays)
The way forward in an uncertain period

Banks in order to continue financing, demanded reduction of loans in order to maintain critical Project Viability (finance parameters, etc.). To make up for this shortfall the solution was in a combination of measures:

- Reduction of scope of work
- Additional Equity Subscriptions by Concessionaires
- Extension of Construction Time Schedule
- Replacement of Bank Loans by State’s share of Toll Revenue
- Potential extension of Concession Duration
- Claw-back provisions for recovering additional State contributions

Would it have been easier to adapt if they were set out as “Regulatory Asset Base (RAB)” projects?
The result! A modern Greek Motorway Network

Today, more than two thousand kilometers of motorways in operation creating a credible modern National Road Network!

Completed in 2017

Source: HELASTRON

(*1): Egnatia Odos has been constructed by sections with traditional public procurement methods
Time to look ahead: The future role of Motorways

The future role is linked to the European and Global developments of the road transport industry. The main areas that will be addressed are:

- Clean Mobility
- Safe Mobility
- Connected Mobility
- Automated Mobility (Digital Revolution)
- Harmonized services & Road usage charges

There are Great opportunities in this fast changing road transport reality!
The future role of Motorways

SOME OF THE KEY ACTIONS PROPOSED BY THE COMMISSION SINCE MAY 2017

- Action plan to accelerate the deployment of alternative fuels
- Facilitation of domestic bus operations
- New CO2 standards for cars and vans
- Strategy for the safe transition to connected and automated mobility
- First ever CO2 standards for trucks
- Improving workers’ social and employment conditions
- Improving the functioning of the road haulage market
- Improved design of cabins
- Promoting the ‘user-pays’ and ‘polluter-pays’ principles through road charging
- Batteries initiative
- New vehicle safety measures
- New road safety framework for the period post 2020
- Common European specifications for electronic tolling

May 2017  November 2017  May 2018
The autonomous car is here.....

In Greece the first accident with Tesla Model 3 outside America! (18/5/2018)

The driver (You You Xue) reports that while on Autopilot, the Model 3 suddenly took a steep turn to the right and despite the driver's attempts to get it back on his way, it crashed with its left side on the barriers of one of the motorway exits. At that time the speed of the car was 120 km/h, there were no other cars around, the weather was very good, and the condition of the pavement and the signage was perfect.

When the accident happened, he tried to touch the steering wheel with his left hand and at the same time, he was looking at his mobile the navigation system. Until the day of the accident, Xue had travelled more than 39,000 km in 25 countries on both Europe & America.
What the development on connected vehicles mean for the Toll Road industry?
How will Toll Road industry respond to this challenge?

The future role of Motorways

Source: McKinsey&Company, Aaron Aboagye, Aamer Baig, Russell Hensley, Asutosh Padhi, and Danish Shafi
Where the road knowledge will come from?

- Car as a sensor
  - HMI development
  - Fuel alternatives
  - Powertrain optimization

- Local traffic recognition
  - Traffic management strategies
  - Traffic prediction
  - Network traffic recognition

- Vehicle routing
  - Energy/carbon profile
  - Vehicle control
  - Trip planning services

Connectivity

Data Analytics (InVision)

Consumer Experience (InVision)
The future of data analytics in transportation has many applications and opportunities.

The challenge is certainly not the ability to generate data, because systems in place are already providing more than is currently being used.

The solution therefore, is pushing forward using significantly improved means and methods to gather and understand the data in order for business decisions to be informed by better insights.
The future role of Motorways

Automobile Industry

Telecommunication Industry

Toll Road Industry

Leader?
Partner?
Follower?
Observer?
The future role of Motorways

Toll Road Industry Manifesto
??????
Action areas for the Toll Road Industry

- **Organize at European and National Level.** Particularly smaller countries need to be a lot more proactive.

- **Look for Financing.** Changes need a well thought out finance plan.

- **Advance the PPP Contract know-how.** The fast changing technology scene will require agile contractual instruments. Countries like Greece that have just gone through “Resets” have to apply even more effort.

- **Promote more efficient state mechanisms.** Perhaps look at a possible pan-European initiative to help member states in developing modern state mechanisms to face these new challenges.
THANK YOU!

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