TURKEY’S DEVELOPMENT OF TOLL ROADS BY PPP STRUCTURE
and ITS EFFECT ON TURKISH TOLL COLLECTION SYSTEM

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September 6, 2018
Agenda

- ICA
- About The Project
- New Pearl of Bosphorus
- Turkish Motorways before PPP’s
- Turkish PPP Framework
- Turkish Motorways with PPP’s
- Tolling before PPP’s
- Tolling after PPP’s
- Future of Private Motorways in Turkey
ICA at a Glance

Essential Infrastructure “Where Europe Meets Asia”

- ICA: The Concessionare of 3rd Bosphorus Bridge (which is named as Yavuz Sultan Selim Bridge) and 160 km. Northern Ring Motorway of Istanbul connecting 3 Airports of Istanbul.
- Tendered in 2012 with a PPP structure, investment of 3.5 Billions USD from 2013-2016, started operation in August 2016. Under Operation for the last 2 years.
- Started from 250.000 users/day and recently reached to 350.000 daily users.
- Favorable location in Istanbul and at Crossroads of Passenger and Freight Flows, Linking Asia to Europe
- The opening of the Largest Airport of Europe (New Istanbul Airport) is to be opened later this year, to further boast the daily traffic.
- ICA became the 23th ASECAP full member by January 2018
About The Project

Essential Infrastructure “Where Europe Meets Asia”
About The Project

Essential Infrastructure “Where Europe Meets Asia”

ABOUT

The Project spanned along Asian and European sides of Istanbul has nearly 160-km long motorway and connection roads, vast amount of infrastructure and superstructure works. The related construction cost is around USD 3.5 billion.

PROJECT

The Northern Marmara Motorway has been structured as a solution for the traffic load in the Northern Marmara region covering the most populous and industrial cities of Turkey, namely Istanbul.

BENEFIT

By attracting heavy vehicles traffic from the existing motorways and the Bosphorus bridges, it will ease transit traffic on Bosphorus bridges as well as inner city traffic in Istanbul.
New Pearl of Bosphorus
“Yavuz Sultan Selim Bridge”
New Pearl of Bosphorus
“Where Europe Meets Asia”

Iconic Bridge: the World’s Longest, Highest and Widest Suspension Bridge with a Railway on the Same Deck
Pre-PPP (till 2016): KGM
All Motorway Investments and Operation by KGM (the Government Entity)

- All Investments: Funded by the Government
- All Operations were done by KGM (the General Directorate of Highways)
- Started with the tenders in 2013, the first PPPs of Turkish Motorway Industry has started.
- The first Motorway PPPs started operations in 2016.

Before 2016
- The Toll Level was at 1USc/km level
- The collection was at 80%, and there were minimal enforcement for non-payers.
- The level of Motorway Service was minimal
There is revenue guarantee: KGM to compensate the deficit revenue amount if the actual toll revenues collected are less than the guaranteed traffic revenues calculated using the guarantee structure.

Although there is the revenue guarantee, Private Investors have the collection risk and this risk is not able to be passed to O&M Co. fully.

Financing is the sole responsibility of Private Investors.

Hgh Level O&M is the sole responsibility of the Private Investors.
Traffic guarantee

- Based on fixed AADT for the Bridge and the Motorway separately
- KGM to compensate the deficit revenue amount if the actual toll revenues collected are less than the guaranteed traffic revenues calculated using the guarantee structure
- Guarantee payment shall be paid annually by end of April of the following fiscal year

Toll tariffs adjustment

- Guarantees defined in USD terms
- Annual FX and USD inflation adjustments for toll tariffs
- Tariffs are adjusted for CPI in January when official information is released

Financing guarantee

- Turkish State Treasury provides guarantees on loans and related financial obligations for c.90% of senior debt amount
Toll Collection ICA
Toll Plazas & Free Flows

**STATISTICS**

<table>
<thead>
<tr>
<th>Toll Plazas</th>
<th>Toll Gates</th>
<th>Free Flows</th>
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<tbody>
<tr>
<td>10</td>
<td>114</td>
<td>9</td>
</tr>
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</table>

**TOLL COLLECTION**

- ETC Based Toll Collection
  - Fully integrated with local ETC systems OGS and HGS
- Other Payment Methods
  - Cash and credit card are also valid

**OGS**
- Prepaid payment through device that can be bought from post office and banks

**HGS**
- Prepaid payment through toll card or sticker, enabling faster passage

**OGS**
- 2.5M Subscribers
- Led by 5 Banks
- Payment Guarantee by Banks
- Active On-Board Unit

**HGS**
- 10M Subscribers
- Led by PTT & Mastercard
- 15 Banks are partners for distribution
- Payment Guarantee by PTT
- Passive On-Board Unit
KGM Toll Collection

All Motorway Investments and Operation by KGM (the Government Entity)

- OGS/HGS: Issuers Guarantees the Payment if the user is not in Black List, hence for KGM, no need to check the credit balance
- Closed Systems: Electronic collection with HGS and OGS
  - No Barriers and/or Cashiers: Hence no Cash and/or Credit Card
  - The collection was at 80%.
  - Little enforcement for non-subscribers or black list customers.
- Each lane recognize either OGS and/HGS since the systems are totally different, hence there is operational confusion and/or malicious usage of car owners. A HGS users, may use OGS lane to use chance of non-payment or vise versa.

Post-PPP (by 2016):

All Motorway Investments and Operation by Private Investors

- All Investments: Funded by Private Investors
- All Operation: was done by Private Operators, hence higher Level of Service
- There is Revenue Guarantee of KGM, but the main funding is the users toll revenues
- The illegal pass is under the responsibility of the Operator, hence collection/enforcement has been crucial
- Each Lane recognize OGS and HGS since Private Investors invested the infrastructure of each system to each lane to minimize the loss of revenue.
- OGS and HGS Issuers has not guaranteed the credit balance hence On-Line Provision has started.
Effect of ICA on Toll Collection Profile

Change in Payment Profile:
- Active OBU’s gained market share from 36% to 42%
- Electronic Collection Improved from 74% to 83%
- Illegal Pass decreased from 6% to 3% before enforcement

Illegal Pass Profile:
- Reduced from 6% levels to 3% levels
- With Enforcement reduced to 1% levels
- Burden to operators is almost 0% (even positive) with penalty regime on Illegal Pass.

Strong Enforcement:
- Administrative & Legal Enforcement is in place
  - Administrative enforcement is followed by Professional Collection Agencies.
- Penalties were 10 times of base toll (40% Operator, 60% Government) before which was reduced to 4 times, to Operator, makes the payment for client easier.

<table>
<thead>
<tr>
<th></th>
<th>Before 2016</th>
<th>After 2016</th>
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<tbody>
<tr>
<td>Max Toll Level</td>
<td>1 Usc/km</td>
<td>8 Usc/km</td>
</tr>
<tr>
<td>Collection /Illegal Pass</td>
<td>%20</td>
<td>Less than 1%</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Low</td>
<td>Strong</td>
</tr>
<tr>
<td>Service Level</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

ILLEGAL PASS PROGRESS

Illegal Pass After Enforcement
Illegal Pass Before Enforcement

Before 2016
After 2016

Max Toll Level
1 Usc/km
8 Usc/km

Collection /Illegal Pass
%20
Less than 1%

Enforcement
Low
Strong

Service Level
Low
High
Future of Private Motorways in Turkey

Growth is expected with PPP

- 2 projects are already under operation
- 4 Projects are already under investment
- 2 Projects is under tender (315km)
- It’s expected to have 12 more projects to be tendered soon (3,754km)

<table>
<thead>
<tr>
<th>KM</th>
<th>2016</th>
<th>2018</th>
<th>2021</th>
<th>2023</th>
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<tbody>
<tr>
<td>KGM</td>
<td>2.289</td>
<td>2.289</td>
<td>2.289</td>
<td>2.289</td>
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<tr>
<td>Private</td>
<td>0</td>
<td>521</td>
<td>1,483</td>
<td>5,552</td>
</tr>
<tr>
<td>Total</td>
<td>2.289</td>
<td>2.810</td>
<td>3,772</td>
<td>7,841</td>
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% of Private

|        | 0%  | 19% | 39% | 71% |

Turkish Motorways by 2023
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