

santiago chile IBTTA Technology Workshop November 12-14, 2006

IBTTA International Bridge, Tunnel and Turnpike Association

IRIDIUM

ACS Infrastructure Development, Inc.

REVENUE LEAKAGE AND ORT

TODAY'S CHALLENGE

Santiago de Chile, November 13, 2006
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 V1.1

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AGENDA

1. Urban Network Motorway in Santiago
2. Today's Challenges of the ORT Model
3. Santiago's ORT Key Criteria
4. Leakage Sources and Causes
5. Revenue Assurance Program
6. Final Conclusions

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Urban Network Motorway in Santiago

Legend:
 - ORT Highways (Red dashed line)
 - Conventional Talled Highways (Grey)
 - Highways Operated by Iridium (Yellow dashed line)

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Today's Challenges of the ORT Model

- Open Road Tolling is an already mature concept:
 - Technology principles were developed late eighties.
 - Off the shelf commercial products were available a few years later.
 - Large ORT sites are in place since mid nineties.
- Therefore, neither the Technology nor the Business understanding seems to be an issue any longer.

The main challenge today is to define the most appropriate set of rules, laws and procedures, in order to reduce leakage as much as possible

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Today's Challenges of the ORT Model

- One of the things we have learnt so far is that ORT offers a rather unique service, as it provides universal credit, and besides that has no means to discontinue the service if a customer becomes slow payer.

This draws an environment where the KPI defining the efficiency of the Operating Model can only move within a very thin layer, in order to guarantee the stability of the Business.

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Today's Challenges of the ORT Model

- Another, is that the Customer Learning Cycle can heavily impact our leakage levels.
- If we had always considered D-Day as the moment when the risk had its peak, once the customer has understood the business rules behind the model, fraud and other behaviors increasing the total leakage of the model have started to grow as well.

Today's Challenges of the ORT Model



Hinge

Santiago's ORT Key Criteria

- Once the Concession Law was approved, works in order to define the tender requirements for the Santiago's ORT Network, took most of the second part of the nineties.
- As a result, the following criteria were considered to be the most appropriate ones when defining the Operating Model framework for the Concessionaires
 - OBU is the only accepted Payment Means.
 - No Video Tolling was considered, something which did certainly stressed all concessionaires when managing the massive distribution process prior to D-Day.
 - Every OBU related to a License Plate
 - One to one relation between OBU and License Plate
 - No Prepayment
 - All payments subjected to a billing procedure.

Santiago's ORT Key Criteria

- Based upon these criteria, a whole set of
 - Legal provisions
 - Business Rules
 - Procedures
- Was defined, resulting in a framework which has proven to be effective in order to support the ramp-up of the system

Leakage Sources and Causes

- Nevertheless, the system as a whole does still produce a significant level of leakage.
- The most important sources for the leakage are as follows (as a reference percentage of the total level of leakage):

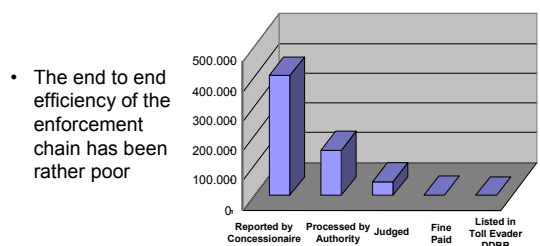
– Operational Leakage	19%
• Vehicles not detected at the Toll Point	
• Incorrect or Incomplete DSRC Transactions	
• Interoperable Accounts	
• Billing Threshold	
• Incorrect Work-flow	
• Low Quality Image	
– Obscured License Plate	14%
– Non-existent License Plate	14%
– Motorbikes	16%
– Foreign Vehicles	1%
– National Vehicle Database	0,03%
– Slow Payers (e.g. Customer DDBB Quality)	36%

Leakage Sources and Causes

- The causes for the Leakage are diverse.
- The following should be considered as the most relevant constraints:
 - Technical
 - Authority
 - Interoperability
 - Operational

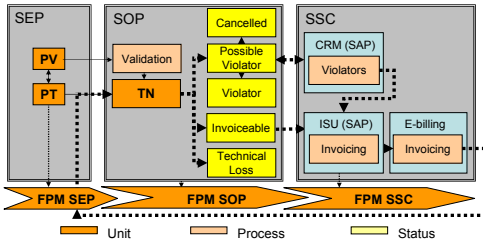
This results in leakage levels which can reach a significant percentage of the AADT

Leakage Sources and Causes



Revenue Assurance Program

- All the previous considerations motivated our organization to have a Transactional Revenue Assurance Program in place right from the D-Day.



Final Conclusions

- At the time of being defined by the Authority, ORT Tender Requirements, do already have to include the appropriate regulations, in order to reduce the problem.
- Revenue Leakage reduction is an important upside of an efficient Operating Model
- To have in place a Revenue Assurance Program including Auditing and Supervising functions is a vital part of this effort