



Promoting & Implementing A High Speed Project (Lessons learnt from experience)

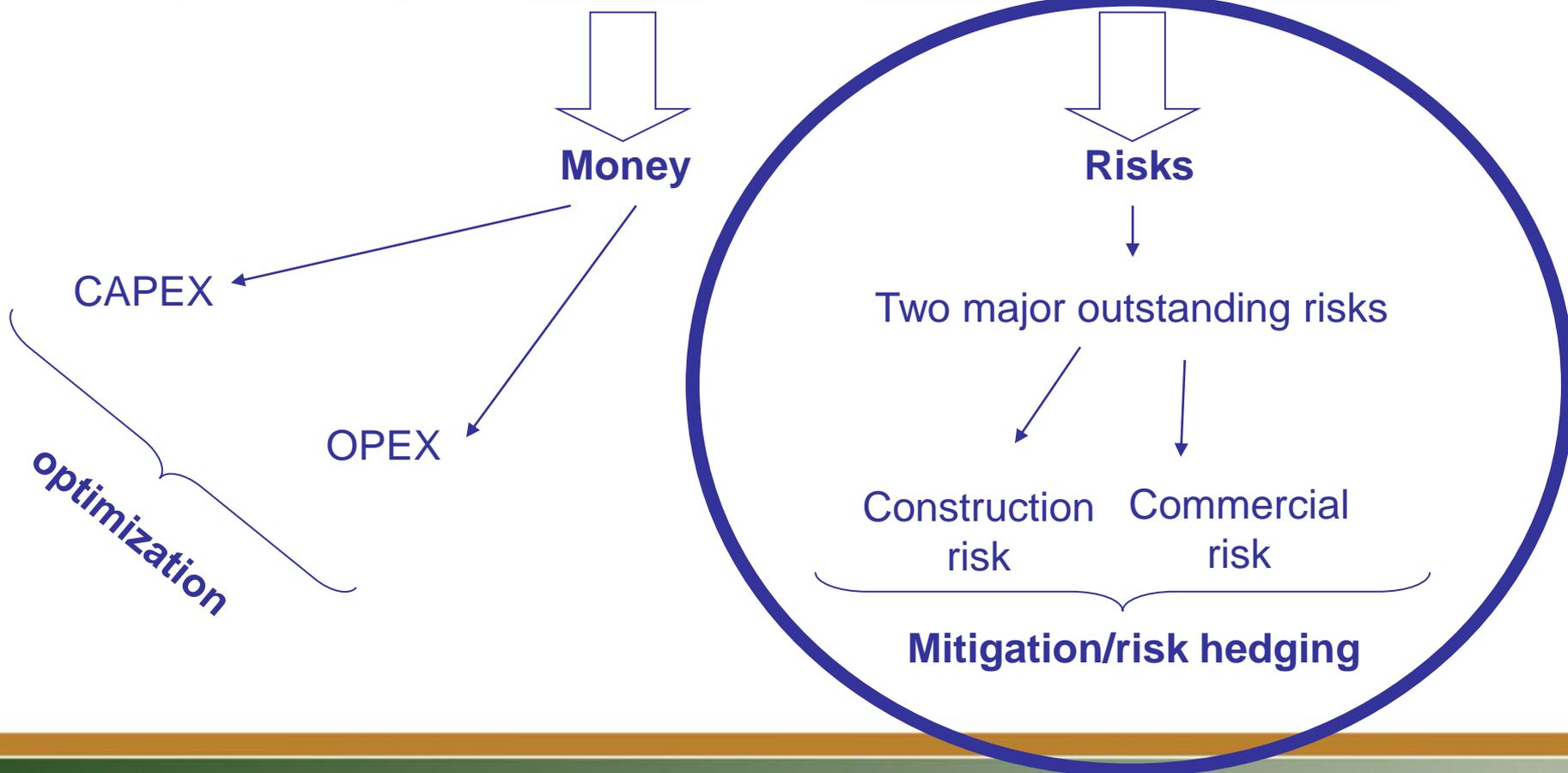
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SNCF, Director for Major Projects

Paris, France



Strategy consists in
optimizing the means in an unchartered context.





Construction Risk





- Ever-increasing pressure over environment mitigating measures
- Land acquisition (legal road blocks)
- Dispute over the route
- Political risk (stop and go)

**To be handled
by public bodies**

Not in my backyard garden!

Such legal dispute is better addressed by a Public Authority who can argue about Public Welfare Utility

- Costs under estimation
- Delays in construction

- Incompatibility of the construction over time
- Incompatibility with the operating scheme
- Decrease in reliability and or availability
- In case of operational disturbance
- Decrease of capacity for potential growth
- Costly for maintenance
- Costly for renewals

- Dispute during the approval or certification process



- Political risk (stop and go)
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**To be handled
by public bodies**

If the body in charge of the construction is at risk, then it is OK.
If not, an incentive must be given through contractual terms.

- Costs under estimation
- Infrastructure components
- Delays in construction

**To be dealt
within
the organization**

- Quality of the construction over time
- Inadequacy with the operating scheme
- Insufficient reliability and/or availability
- Low recovery in case of operational disturbance
- Lack of capacity for potential growth
- Costly for maintenance
- Costly for renewals

- Dispute during the approval or certification process



- Political risk (stop and go)
- Dispute over the route
- Land acquisition (legal road blocks)
- Ever-increasing pressure over environment mitigating measures

To be handled by public bodies

A trade-off between expensive high quality construction and high maintenance costs has to be made. An incentive in reducing the life cycle cost is needed.

- Costs under estimation between infrastructure components
- Delays in construction

To be dealt within the organization

- Quality of the construction over time
- Compatibility with the operating scheme
- Constant reliability and or availability
- The intensity of operational disturbance
- Lack of capacity for potential growth
- Costly for maintenance
- Costly for renewals

Involvement of an operator from the very beginning

- Dispute during the approval or certification process



- Political risk (stop and go)
- Dispute over the route
- Land acquisition (legal road blocks)
- Ever-increasing pressure over environment mitigating measures

To be handled by public bodies

The rules and standards have to be established beforehand. A follow-up is necessary. Even on security and safety a deal has to be made.

- Costs under estimation
- Gaps between infrastructure components
- Delays in construction

To be dealt within the organization

- Inability to manage the complexity of the construction over time
- Inability to manage the interface with the operating scheme
- Insufficient reliability and/or availability
- Inability to manage the capacity in case of operational disturbance
- Inability to manage the lack of capacity for potential growth
- Costly for maintenance
- Costly for renewals

Involvement of an operator from the very beginning

- Dispute during the homologation or certification process

co-operation between administration and owner



Purchasing the Rolling Stock





Purchasing the Rolling Stock

Main issues to address:

- Appropriate tender documents
 - Choice of criteria:**
Fixed/variable cost, Life cycle cost, Capacity, RAMS
- Flexibility over time
 - Evolution of the society and adjustment to traffic requirements:**
A major issue: telecommunications
+ Network evolution
- Role devoted to the manufacturer
 - Just a supplier/ a supplier also in charge of maintenance**
+ issue of homologation
- Optimum size of the fleet
 - Traffic seasonality as a key parameter**
- Optimum size of the market
 - A bet on the traffic forecasts, their future trend**
and the network development



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Traffic seasonality as a key parameter

A bet on the traffic forecasts, their future trend
And the network development



Commercial Risk





- Imperfect knowledge of the market
- Too pessimistic or optimistic traffic forecast
- Wrong evaluation of the sensitivity to prices

Whatever the quality of a consultant or of several consultants is, nothing compares with commitment.

- Length of competitors' reactions
- Insufficient notoriety
- Inadequate market segmentation
- Wrong service packaging

- Failure in securing customer loyalty
 - Lack of flexibility in the service
 - Inability to adjust the fare policy
 - Impossibility to adapt the product
- Lack of real time reactivity to the change in competition

Hiring a traffic forecaster ready to share the risk such as an operator



Just 3 months!

- Imperfect knowledge of the market
- Too pessimistic or optimistic traffic forecast
- Lack of understanding of the sensitivity to prices
- Under evaluation of the strength of competitors' reactions
 - Insufficient notoriety
 - Inadequate market segmentation
 - Wrong service packaging
- Failure in securing customer loyalty
 - Lack of flexibility in the service
 - Inability to adjust the fare policy
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Hiring a traffic forecaster ready to share the risk such as an operator

Marketing & Timing are of the essence



- Imperfect knowledge of the market
- Too pessimistic or optimistic traffic forecast
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Hiring a traffic forecaster ready to share the risk such as an operator

The rolling stock is bought for 30 years
But the service and the product must be constantly renewed

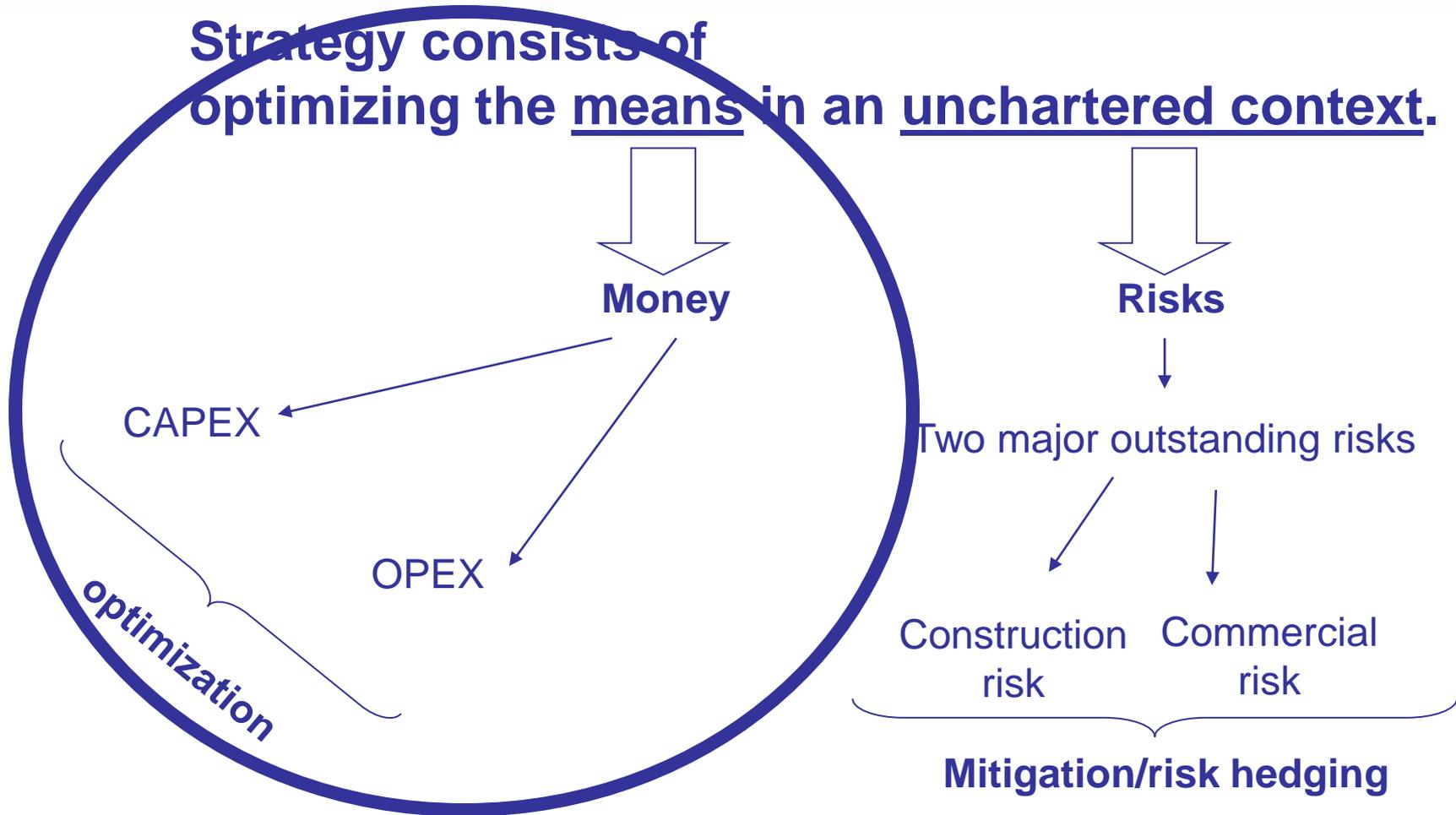
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Marketing & Timing are of the essence

**Freedom & Flexibility
+
Real time revenue management**

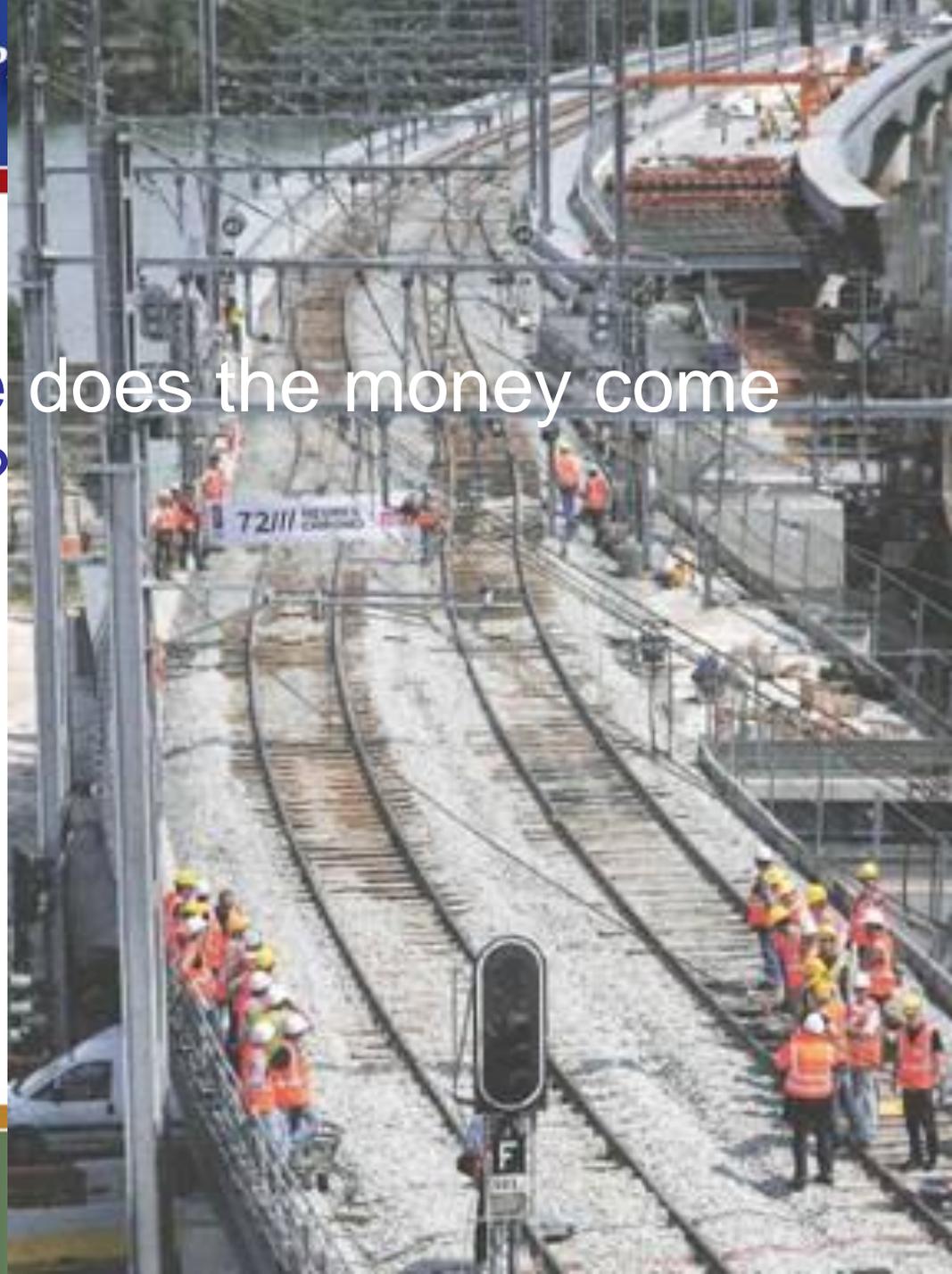


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CAPEX: where does the money come from?



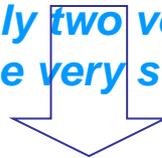


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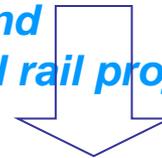
*After having implemented and commissioned
several thousands of miles of high speed lines, ...*

*... and having reviewed
many similar projects
In Europe and Asia, ...*

*... only two very basic facts stand
as the very staple in high speed rail projects.*



Such projects
are mainly characterized
by their construction cost,
their service quality
and the market
where they will take place



There are only
two funding sources:
the tax payer
and the passenger.

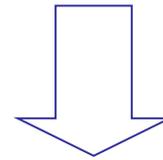
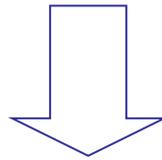
... And that's all!



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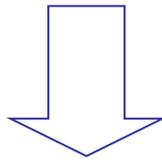


*The profitability of the project is linked
to its physical features and its market
and
any legal, organizational and financial scheme
will not dramatically
change its profitability...*

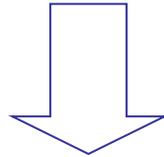


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**In most cases a High Speed Rail project
is not profitable enough
to be funded solely by the private sector**



Public money is needed



Why should a public body finance a HSR project?

Under which provisions will this money be invested?



Why should a public body finance a HSR project?

- Prevention of climate change
- Role of infrastructure in the creation of wealth
- Territory management (accessibility)
- City management (urban planning)
- ...

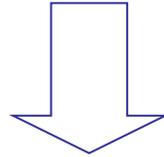
Under which provisions will this money be invested?

- Socio-economic benefit → conditions on the fare system
- Purchasing of capacity → Ability to use part of the capacity for local services
- ...

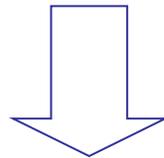


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Public money is needed



There are only two funding sources:
the taxpayer on the one hand
and the passenger on the other hand



The financial engineering work
consists of finding the best compromise
between these two funding sources

Public money → Conditions

Potential
Involvement
of private
parties

Risk sharing
assessment



Public – Private Partnerships



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TRANSPORTATION
ASSOCIATION





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Many possibilities

BOT for infrastructure management

Risk on

Construction costs
Maintenance costs
Operations costs

Versus

Almost fixed revenues
+ incentives

Risk on

Construction costs
Maintenance costs
Operations costs
Path Revenues

Versus

Track access charges
+ incentives

BOT for train operations

Risk on

Passenger traffic
Track access charges

Versus

Passenger revenues
Competition



International



Management of stations





OPEX: How to optimize them?





OPEX list:

- 1) Rolling stock maintenance and cleaning
- 2) Infrastructure maintenance
- 3) Commercialization, marketing, branding, ticket issuing & seat reservation
- 4) Energy
- 5) Station operations and maintenance
- 6) Drivers
- 7) Conductors (train inspectors) & on-board services
- 8) Overheads and miscellaneous

OPEX drivers:

- Travel time
- Distance
- Speed

- Labor costs
- Energy costs





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How much is speed?

Fixed OPEX:

65%*

- Overheads
- Commercialization
- Communication
- Operations in stations
- Operations of infrastructure
- Maintenance of earthworks
- Maintenance of tunnels
- Maintenance of viaducts and other structures
- Maintenance of security installations
- Training of staff
- Maintenance of the car bodies
- ...

OPEX increasing with speed:

- Energy (most of it)
- Track maintenance
- Maintenance of the energy supply system (most of it)
- Maintenance of the rolling stock (most of it)
- ...

25%*

OPEX decreasing with speed:

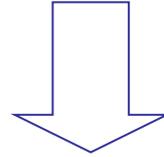
- Driving
- Conducting
- On board services
- Maintenance of the rolling stock (a small part of it)
- ...

10%*

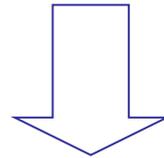
* As a proxy and varies with the corridor and the country



How much is speed?



What revenues are at stake?



Main parameters:

- Air competition and road competition
- Elasticity of traffic to travel time
- Level of fares
- Revenue management system



Honor the past and Imagine the future





Be ambitious



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Thank you for your attention

