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

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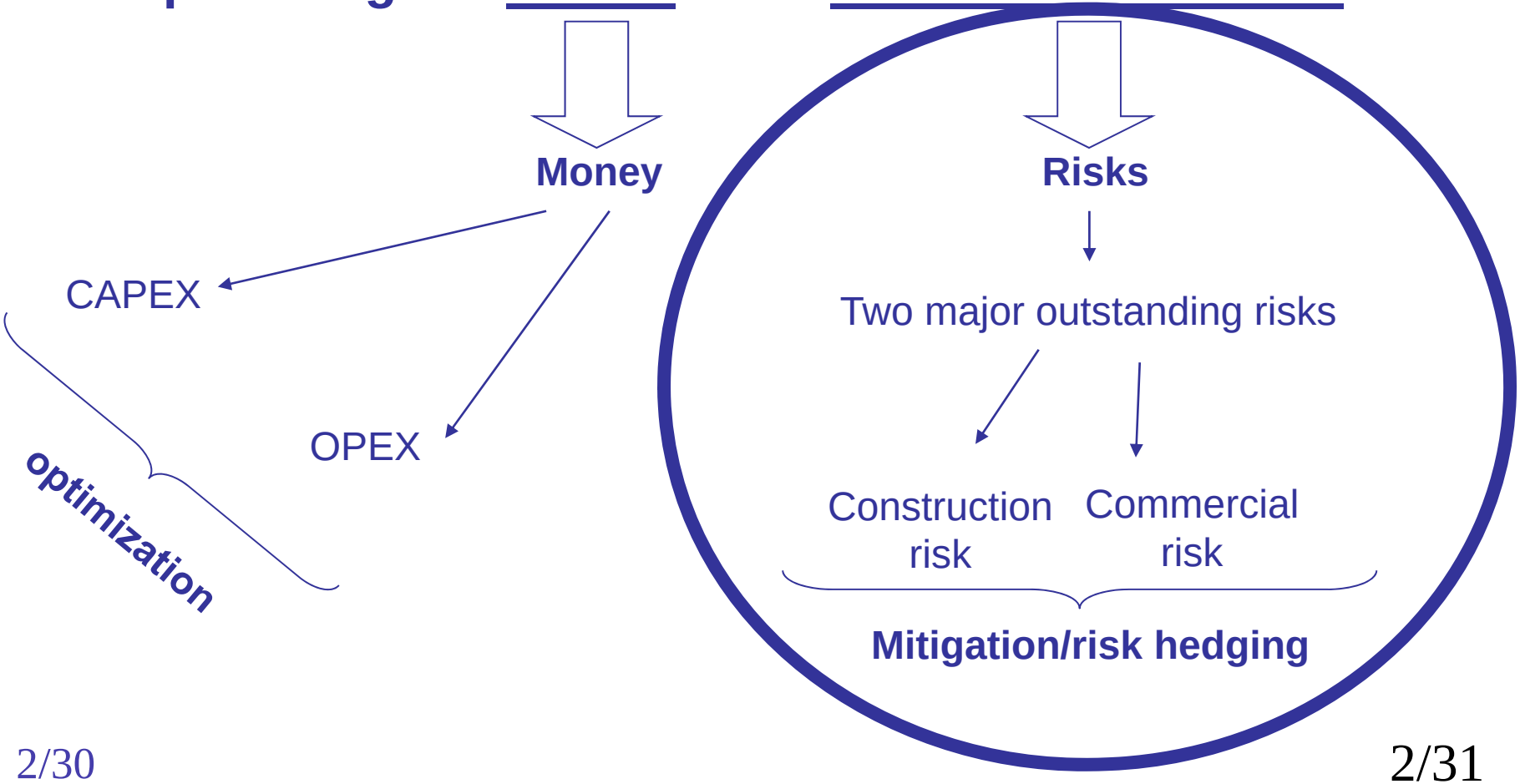
Strategy consists in optimizing the means in an unchartered context.



Construction Risk

Construction Risk

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

-Costs under estimation
nfrastructure components
-Delays in construction

the construction over time
with the operating scheme
eliability and or availability
of operational disturbance
pacity for potential growth
-Costly for maintenance
-Costly for renewals

-Dispute during the homologation or certification process

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 Walfare Utility

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-Costs under estimation
-Delays in construction

To be dealt within the organization

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.

-Quality of the construction over time
-Inadequacy with the operating scheme
-Insufficient reliability and or availability
-Lack of capacity for potential growth
-Costly for maintenance
-Costly for renewals

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Construction Risk

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To be handled by public bodies

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-Delays in construction

To be dealt within the organization

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.

-Quality of the construction over time
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Involvement of an operator from the very beginning

-Dispute during the homologation or certification process

Construction Risk

-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
-Delays in construction

To be dealt within the organization

-Inability for ... lity of the construction over time
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Involvement of an operator from the very beginning

-Dispute during the homologation or certification process

co-operation between administration and owner

Purshasing 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 the manufacturer	**Just a supplier/ a supplier also in charge of maintenance** **+ issue of homologation**
-Optimum size of the fleet	**Traffic saisonality as a key parameter**
-Optimum size of the market	**A bet over the traffic forecasts, their future trend** **And the network development**

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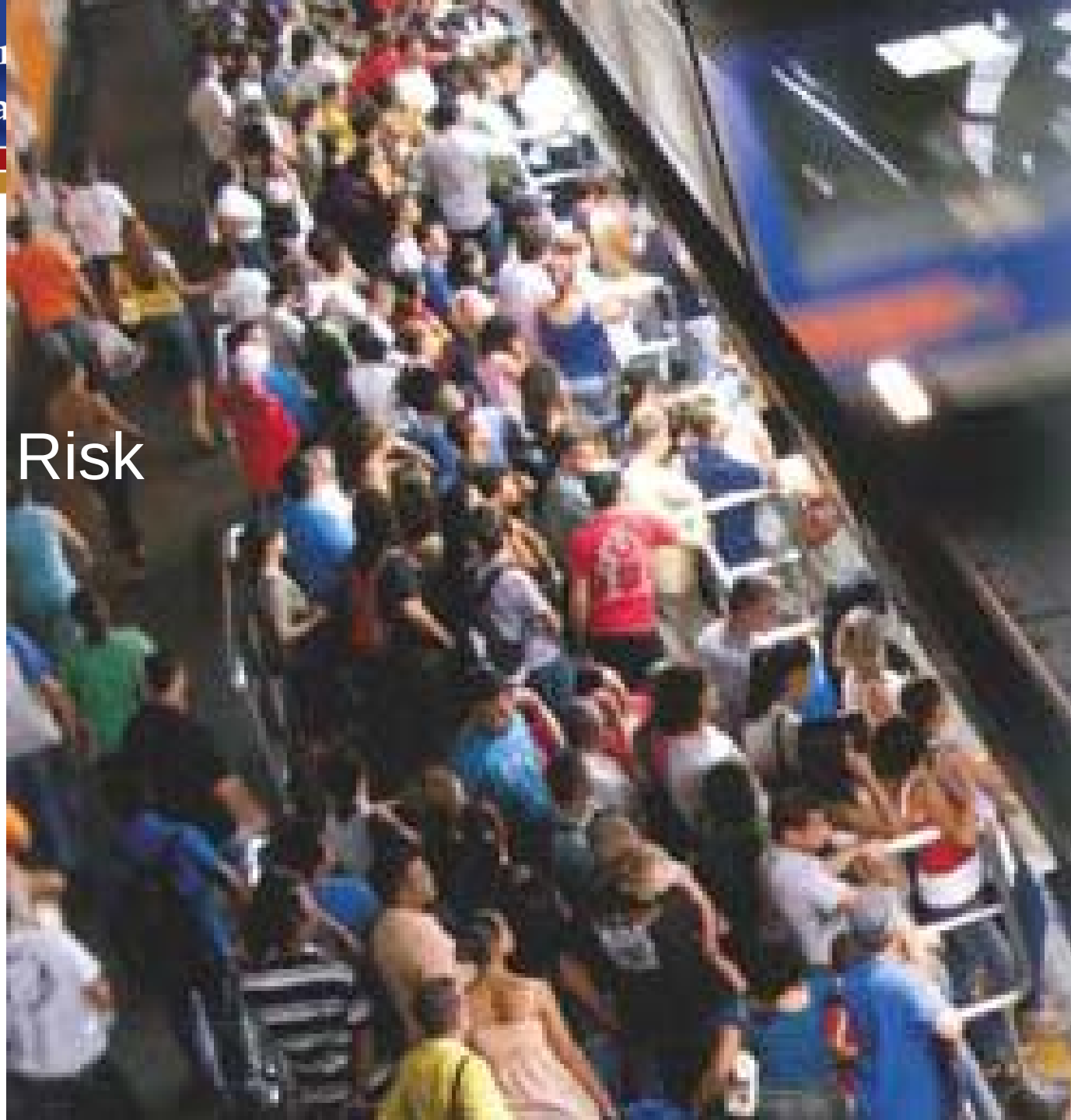
Commercial Risk



Commercial Risk

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

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

ength of competitors'reaction
-Insufficient notoriety
equate market segmentation
-Wrong service packaging

-Failure in securing the customer loyalty
-Lack of flexibility in the service
-Inability to adjust the fare policy
-Quite impossibility in adapting 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

Commercial Risk

-Imperfect knowledge of the market
-Too pessimistic or optimistic traffic forcast
on of the sensitivity to prices

Just 3 months!

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

-Under evaluation of the strength of competitors'reaction
-Insufficient notoriety
-Inadequate market segmentation
-Wrong service packaging

Marketing & Timing are of the essence

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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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Freedom & Flexibility + Real time revenue management

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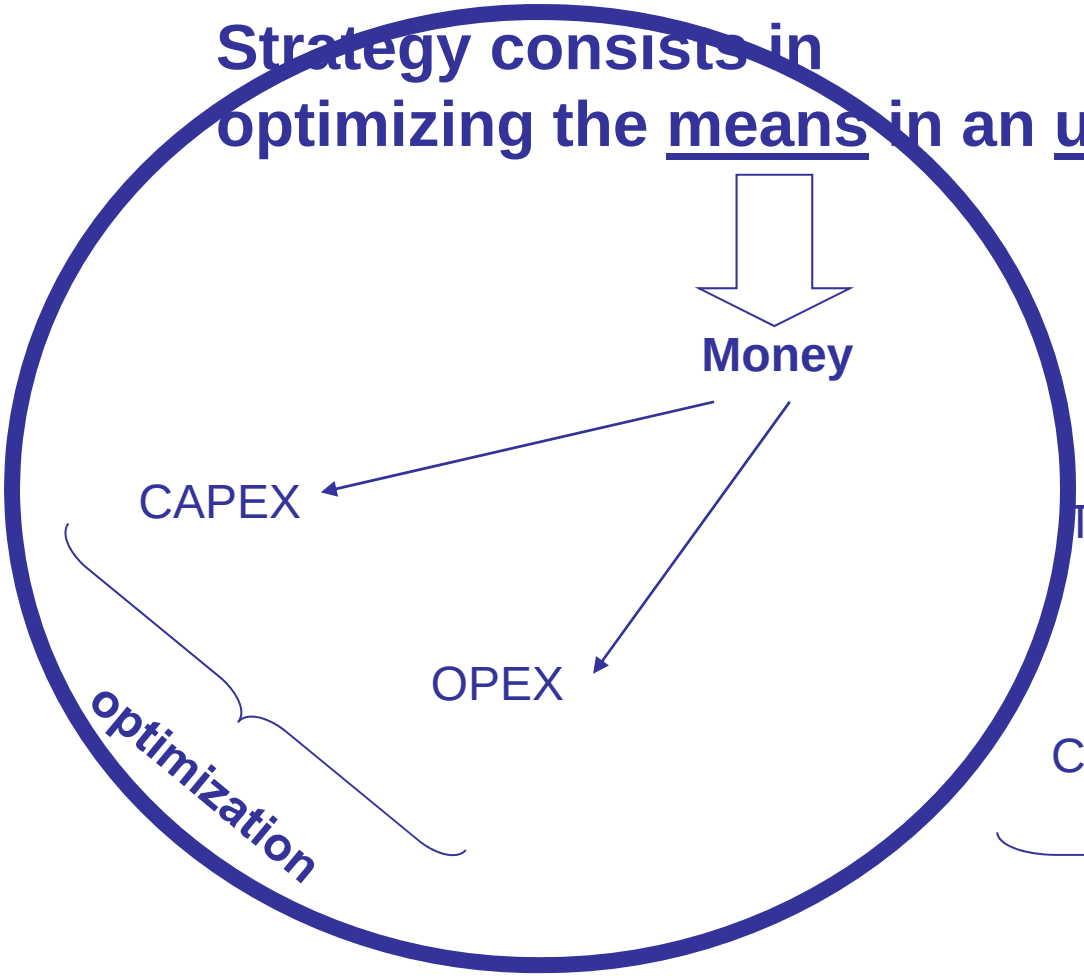


Risks

Two major outstanding risks

Construction risk

Commercial risk

Mitigation/risk hedging

CAPEX: where the money comes from?

After having implemented and commisioned 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 payor and the passenger.

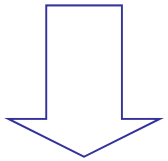
... And that's all!

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

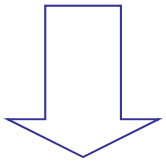
There are only
two funding sources:
the tax payor
and the passenger.

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

In most cases a High speed Rail project is not profitable enough to be funded by the sole private sector



Public money is needed



Why should a public body finance a HSR project?

With which proviso this money will 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)
-...

With which proviso this money will be invested?

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

Public money is needed

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

→ Public money → Conditions

→ Potential Involvement of private parties → Risk sharing assessment

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

→ Risk sharing assessment

Public – private partnerships

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

Passengers Traffic
Track access charges

Versus

Passengers revenues
Competition

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) Conducters (train inspectors) & on-board services
8) Overheads and Miscellaneous

OPEX drivers:

-Travel time
-Distance
-Speed

-Labor costs
-Energy cost

How much is speed?

Track 201

Fixed OPEX:

65%*

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

OPEX increasing with speed:

-Energy (most part of it)
-Track maintenance
-Maintenance
of the ennergy supplying system (most part of it)
-Maintenance of the rolling stock (most part of it)
-...

25%*

OPEX decreasing with speed:

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

10%*

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

What revenues are at stake?

Main parameters:

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

Honor the past and Imagine the future

Be ambitious

Thank you for your attention