





MOON BASE: Learning from

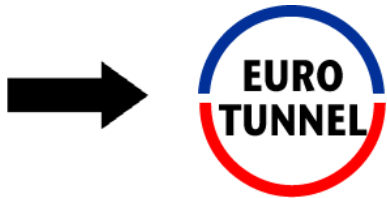


MOON BASE and Eurotunnel: SHARED FEATURES

➔  is gateway between Britain (1987 - 50 million pop) and continental Europe (1987 - 290 million population)

➔  **MOON BASE** is gateway between Earth (2005 - 6 billion pop) and the Solar System (2005 - less than 10 people)

Shared physical challenges :



- Main physical challenge is 30 miles of rock

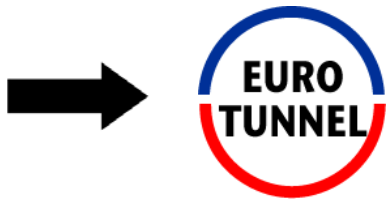


- Main physical challenge is a reduced gravity environment

Common factor: HOSTILE ENVIRONMENT

Shared Financial Challenge:

Cost of developing the Gateway
is very high



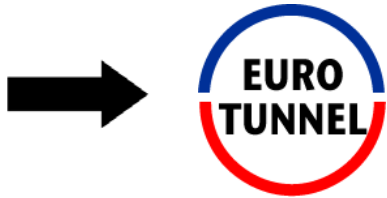
- Cost in 1987 projected to be GBP £6 billion (\$10.8 billion) turned out to be GBP £10 billion (\$18 billion) (=USD \$30 billion in current terms)



- Costs???

Shared Political Challenge

- Establishing the Gateway requires highest-level political support & international treaties in the early phase



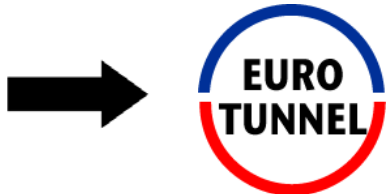
- First attempt fails - Heath-Pompidou (1973-1975)
- Second attempt succeeds - Thatcher-Mitterrand (late 1984-July 1987)

Questions for investors in an international Gateway project:

- Is the political leadership of each of the major partner countries able to deliver?
- Do they have the vision?
- Do they have the political clout?
- Does the timetable fit with the election cycle?

What the voters want to hear:

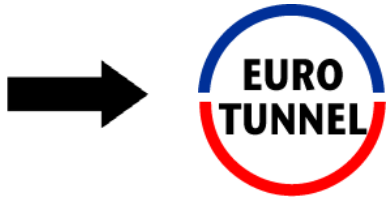
- No cost to tax payer
- Vision



- “intention to seek private promoters for the construction and operation of a fixed link without public funding”

Funding Building Blocks #1:

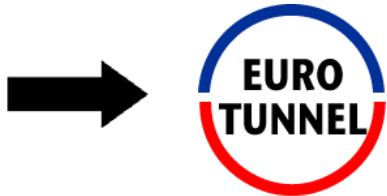
- Core private sector group representing a wide spread of business interests from the partner countries



- UK construction: Balfour Beatty, Costain, Tarmac, Taylor Woodrow, George Wimpey
- UK banks: Midland, NatWest
- French construction: Bouygues, Dumez, Soc Gen; Spie Batignoles
- French banks: Credit Lyonnais, BNP, Indosuez

Funding Building Blocks #2:

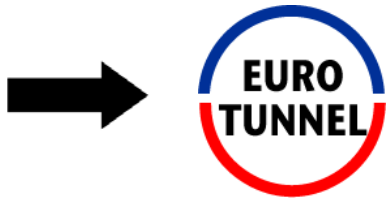
Contracts from Government/quasi
Government-owned Users



- Railways agreed to pay minimum usage charges for first 12 years

Funding Building Blocks #3:

Wide range of revenue streams:




(2003 projections in 1987)

- Carrying cars in shuttles: 53%
- Railways: 39%
- Other (property etc) 8%

What went wrong for



- 2003 Revenues projection in 1987:
\$ 1160 million (GBP £ 646 million) (1987 prices)
- 2003 Revenues outcome :
\$ 560 million (GBP £ 311 million) (1987 prices)



Why did
experience a 50 per cent
shortfall in projected
revenues?

- No long-term contracted user of shuttle car service
- Rise of Budget airlines
- Internet booking

How **MOON BASE** might be funded #1:

- Prospective Facilities and Services:
 - Shuttles-docking/launch/repair
 - R&D facility
 - Hospitality facility
 - Medical facility
 - R&R facility
 - Labs
 - Mineral extraction
 - Tourism??

How MOON BASE might be funded #2:

- Committed Users:
- Government agencies
 - to commit to minimum number of flights and overnight stays for 50+ Years
- Traffic through the Solar System to go through the Gateway until investors have received a satisfactory return
- Take or pay contracts

How **MOON BASE** might be funded #3:

- Use of Phased Funding:



model:

- Two rounds of private equity
- One public flotation (1 part private equity to three parts public equity)
- Placing of debt (5 parts debt to 1 of equity)

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