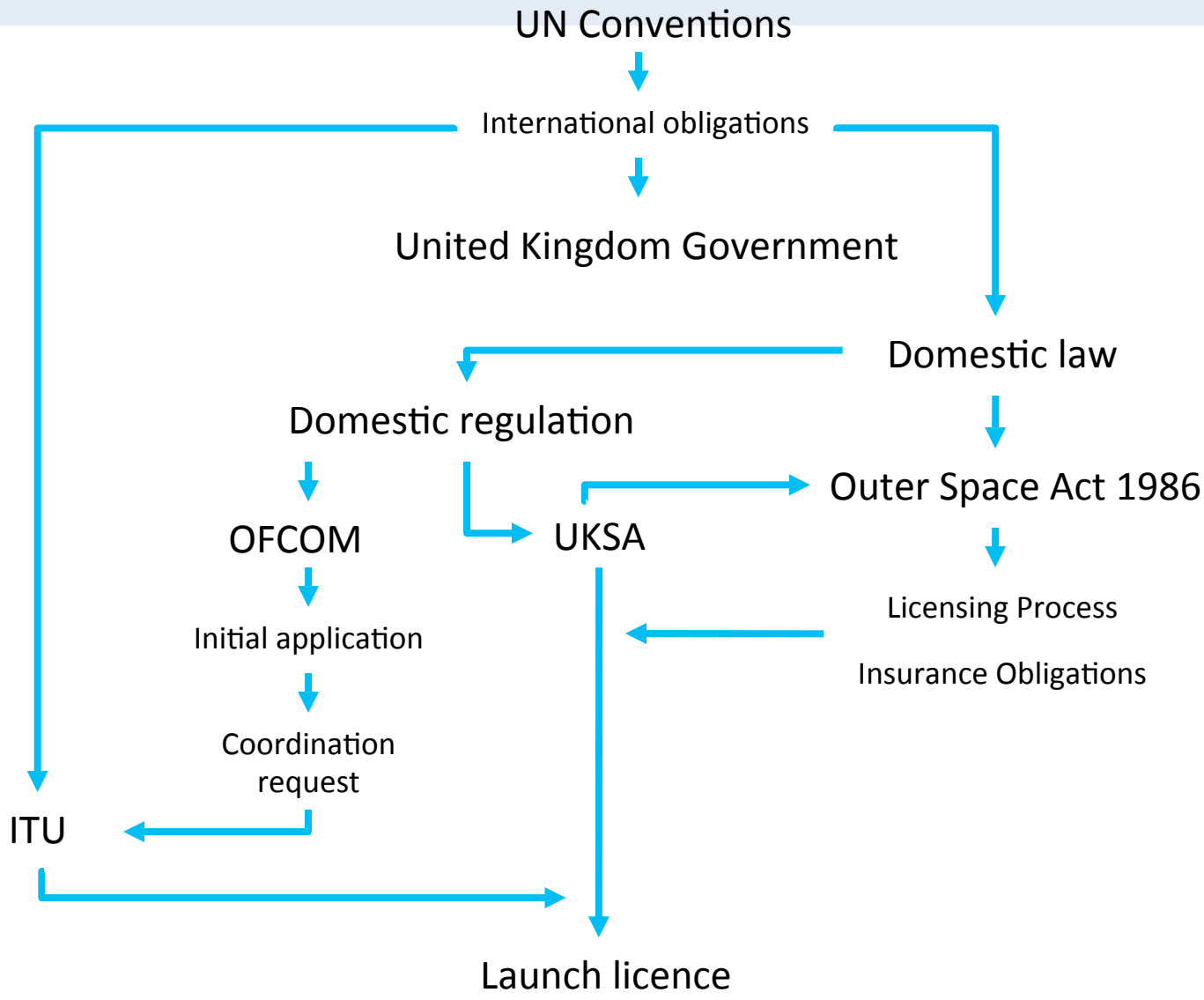
Jurisdiction & Governance

London Institute of Space Policy and Law

29th April 2013

Neil Stevens

Jurisdiction and Governance



Jurisdiction and Governance

- Space formerly the remit of government activity
- USA v USSR
- Cold war promoted extensive competition
  - Strategic advantage?
  - Publicity stunt?
- USSR first man in space
- USA first man on the moon
- Huge costs
- Springboard for space related activity

Jurisdiction and Governance

Yuri Gagarin

Vostok Spacecraft 1961

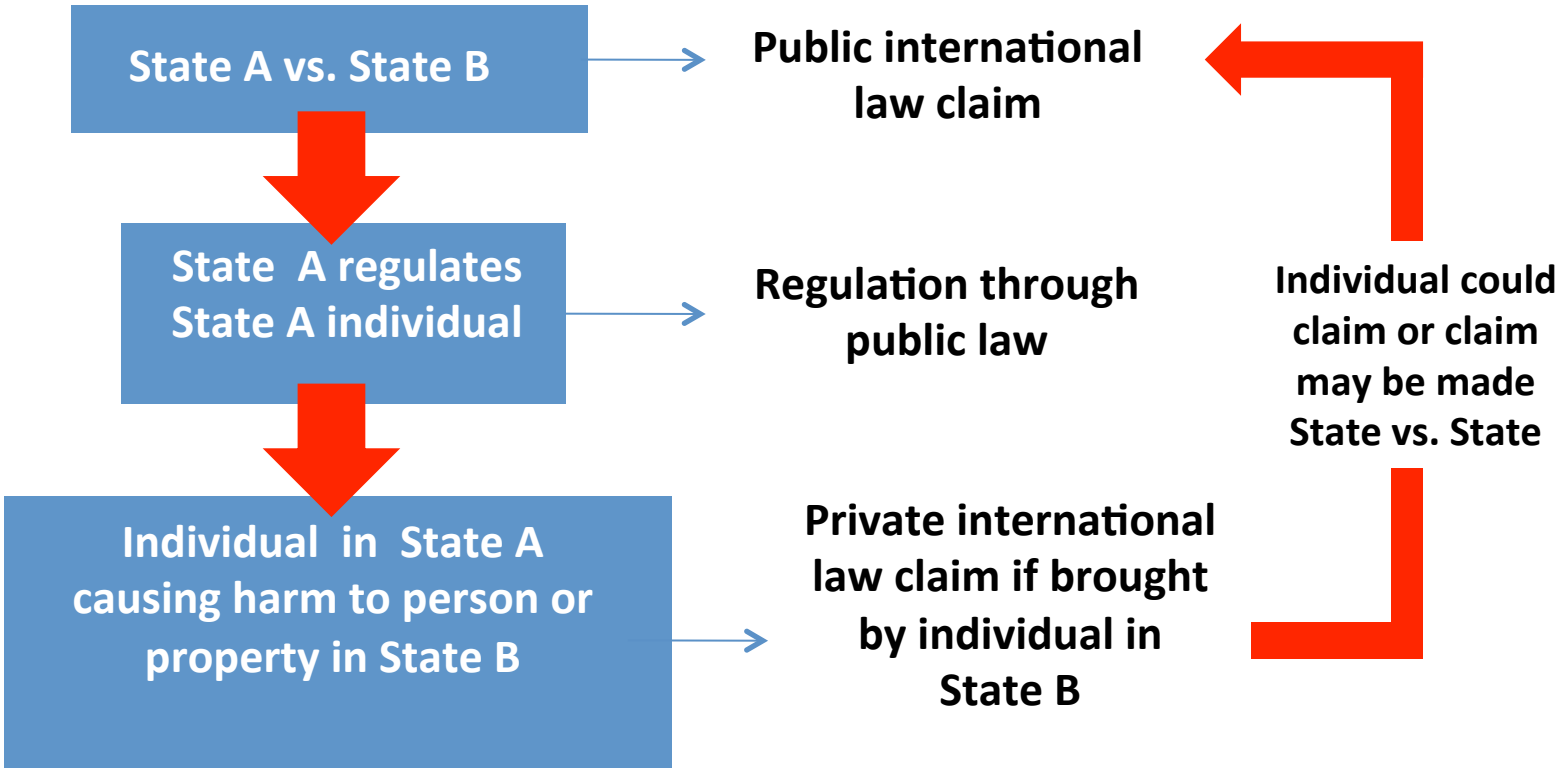
"We choose to go to the moon!" [1962]

Jurisdiction and Governance

- UN treaties followed
- Outer Space Treaty 1967
  - Peaceful use
  - Space is for all mankind
  - Regulation of activity follows
  - Jurisdiction and control over objects [and personnel] similar to shipping and the flag of registration, jurisdiction is retained by the launching state [Art VIII OST]
- Liability Convention
  - Launching state
  - Liability regimes
  - Responsibility at state level
  - Regulate domestic level

Public law and Private law

- Public law = government
- Private law = private citizens



Outer Space Treaty 1967

- The original basis of legal liability for the purposes of space activity

" . . . State Parties to the Treaty shall bear international responsibility for national activities in outer space . . . whether such activities are carried on by governmental agencies or by non governmental entities." Furthermore, State Parties are charged with the responsibility for " . . . assuring that national activities are carried out in conformity with the provisions (of the Treaty)."

"A state bears international responsibility for national activities in space and must authorise and supervise any non-governmental entities in space."

Liability Convention 1972

- Determines who is responsible and the circumstances for liability
- Absolute liability for a State

  ". . . . which launches, or procures the launching of a space object, or from whose territory a space object is launched" [Art I]
- But only liable

  "... to pay compensation for damage caused by its space object on the surface of the earth or to aircraft flight [Art II]
- Elsewhere is fault based

  "... damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible" [Art III]

Iridium 33 / Cosmos 2251

- Collision in space

  http://www.youtube.com/watch?v=_o7EKlqCE20&feature=player_detailpage

  - Iridium can manoeuvre Cosmos cannot
  - Warning of potential collision given to Iridium
  - Warning ignored by Iridium
  - Satellites collide and are destroyed
  - Who is liable?
    - Iridium?
    - Cosmos?

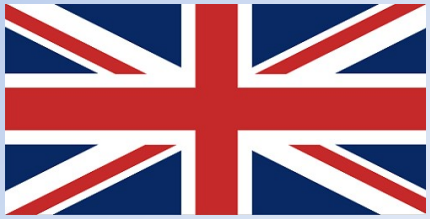
How States deal with Liability

- Past 5-10 years shift from governmental activity to commercial sector
- Governments promoting commercial activity
  - US activity
    - Shuttle retired
    - Space X and Orbital Sciences contracts to supply ISS
  - UK activity
    - Innovation and growth strategy
- Space is becoming more commercialised

How States deal with Liability

Risk Sharing

Risk Transfer



Risk Acceptance

How States deal with Liability

- USA
  - FAA maximum probable loss study
  - Recommendation of TPL insurance limit
  - TPL insurance limit of USD500m
  - Government steps in for the next layer (USD1Bn)
  - Above 1.5Bn liability reverts to the licence holder
- UK
  - Unlimited liability regime
  - Now limited – with flexibility – an excellent solution

How States deal with Liability

- France
  - Arianespace provides insurance under the LSA (circa EUR60m)
  - French Government agrees to indemnify above the limit
  - Risk sharing
- Biggest liability claim (State v State) approx USD6m from Cosmos 956 crash
- Very little by way of insurance activity
  - Low insurance rates as a result

Domestic

- Onus is on states to regulate private parties
- Domestic legislation used to convert international obligations

Outer Space Act 1986

1986 CHAPTER 38

An Act to confer licensing and other powers on the Secretary of State to secure compliance with the international obligations of the United Kingdom with respect to the launching and operation of space objects and the carrying on of other activities in outer space by persons connected with this country. [18th July 1986]

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:-

- Not all states have dedicated legislation
  - UK, USA, France, Netherlands, Australia
- UK legislation is the Outer Space Act 1986
  - Sets out the requirements for applicants for a launch licence

Domestic Regulation - UKSA

- Application for a launch licence through UK Space Agency

Application form; Initial information; Fee

UKSA checks insurance requirement met; financial status; technical suitability; suitability to operate in light of international obligations; risk assessment; OFCOM checks to ensure filings have been made; political and legal review with other Departments to ensure UK interests are not impaired

Final decision; conditions if appropriate

License issued

Domestic Regulation OFCOM

- UK telecommunications regulator
  - Further the interests of consumers/citizens
  - Regulates competition
  - Responsible for ensuring that applicants have the required technical, financial and legal credentials to construct, launch and operate the proposed satellite system
- OFCOM is responsible for making applications to the ITU
  - Two stage process

OFCOM

- Application to broadcast through OFCOM
- OFCOM application procedure for filing with the International Telecommunications Union (ITU)
- ITU procedure
  - Initial application
    - Basic information, small fee, 6 month wait
  - Coordination request
    - Serious intent, larger fee, 2 ½ years
- Coordination procedure is voluntary process
- ITU has no teeth

Finance & Procurement

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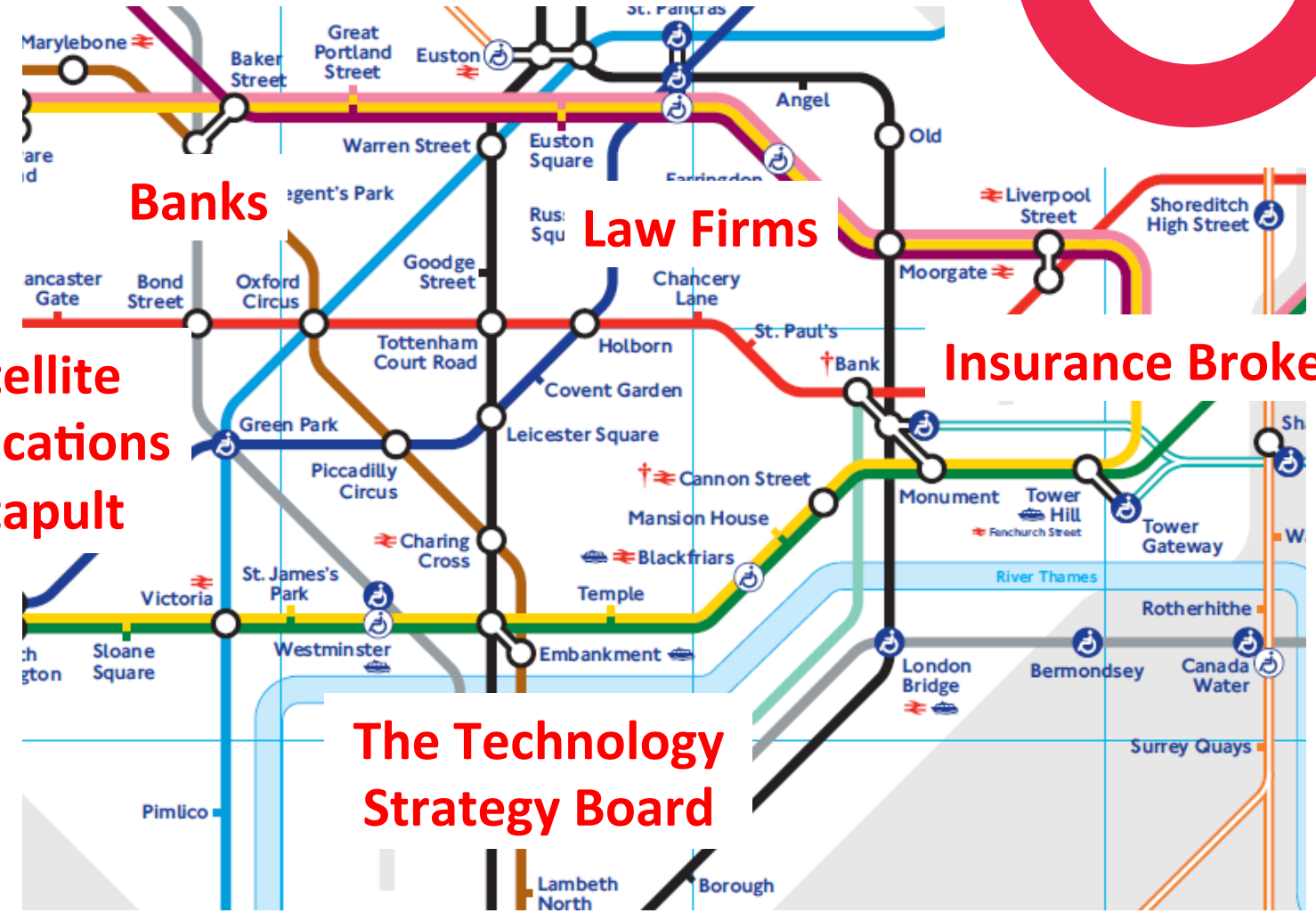
Finance

- Raising finance is key problem for projects
  - Most projects fail at this stage
  - More rigorous requirements of lenders since 2008
  - Lenders seek
    - Tried and tested technology
    - Proven business application
    - Banking relationship
    - Proven technology
- New projects need expert advice
- UK Government Space Innovation and Growth Strategy set the objective of growing UK Space Sector from £7Bn to £40Bn by 2030

Obtaining Expert Advice

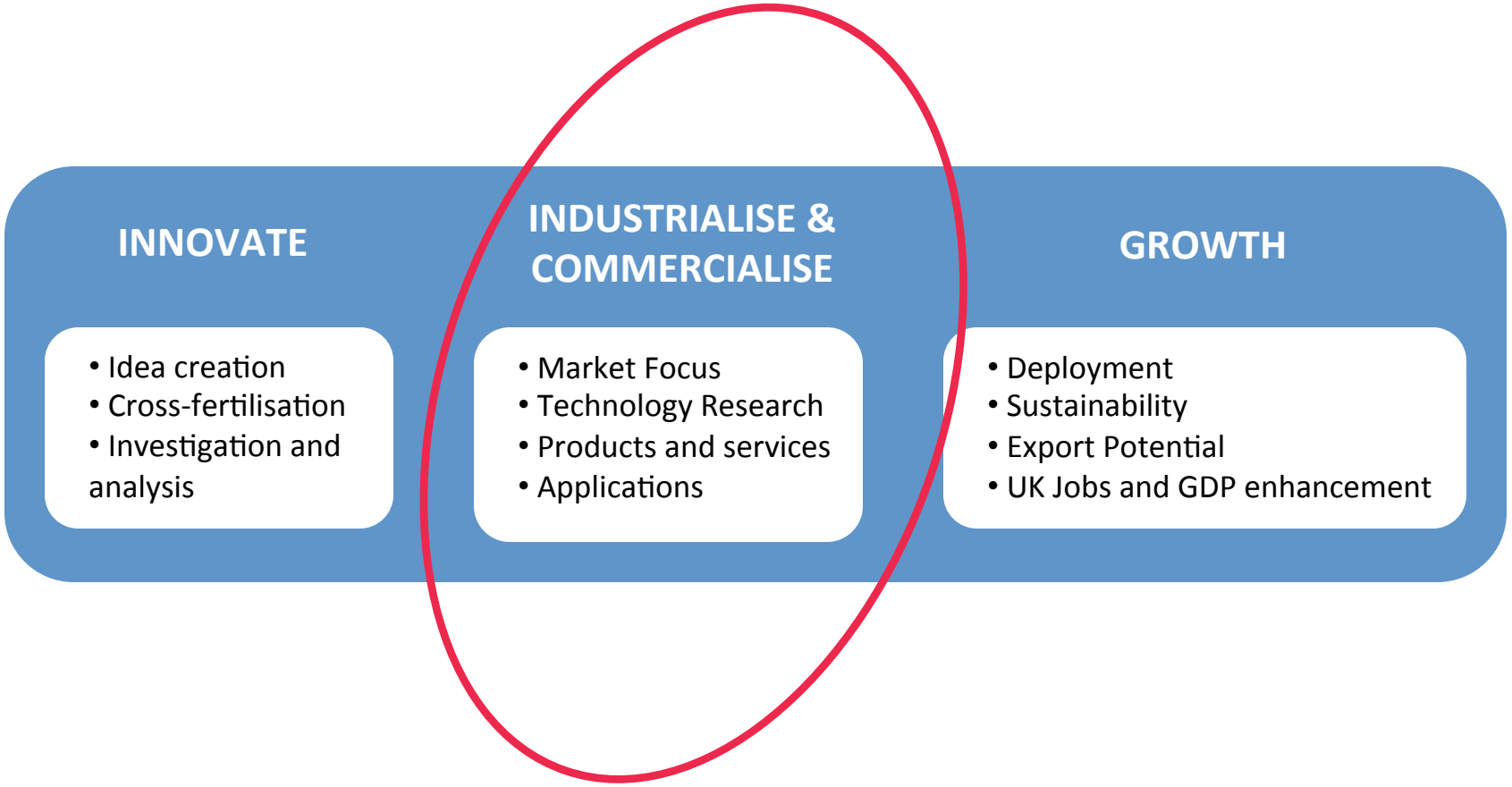
WHERE TO GO FOR ADVICE



Finance

- Satellite Applications Catapult
  - Organisation to help promote economic growth through commercialisation of research
  - A centre of excellence
    - Develop a range of facilities
    - Provide world class technical capabilities
    - Deliver a range of projects and services to a plethora of customers
      - Industry
      - SMEs
      - Government
      - Academia

Satellite Catapult Mission



Technology Strategy Board

"Accelerating economic growth by stimulating and supporting business-led innovation"

- Supports a range of businesses
  - Transport
  - Healthcare
  - Energy
  - ICT
  - Biosciences,
- TSB funding enables new private sector funding through matching
- To attain IGS target need to stimulate new entrepreneurs and high-growth SMEs

Harwell Space Launchpad (TSB)

- Business support programme
  - Enabling young and early stage SMEs with significant growth ambition by being part of a developing cluster
    - Advice and coaching
      - Investment readiness development
      - Professional support
      - Presentation skills
    - Mentoring
      - Peer-to-peer/Entrepreneurs
    - Investor development
      - Awareness building
      - Investment opportunities

Harwell Space Launchpad (TSB)

- Cluster support for businesses on Campus and/or which want to interact closely with the cluster
  - Access to cutting edge facilities
  - Technical support
  - Support for International Trade and Partnerships
  - Business advice
  - Investment network

Insurance Brokers

Decision to Build Satellite

Collect claims

Assist in drafting RFP

Service the account

Assist in raising finance

Handle money and accounting

Risk mitigation = Cost reduction

Help evaluate proposals

Cost reduction reduces borrowing requirement

Bind insurance contracts

Provide advice to assist contract negotiation

Negotiate best price

Broker paid when insurance is purchased

Negotiate insurance contract

Lenders require insurance to secure loan

Review contracts and provide advice on terms

Market the risk

Commercial risk mitigation advice is provided without payment up front

Review contracts and advise how best to insure commercial risk

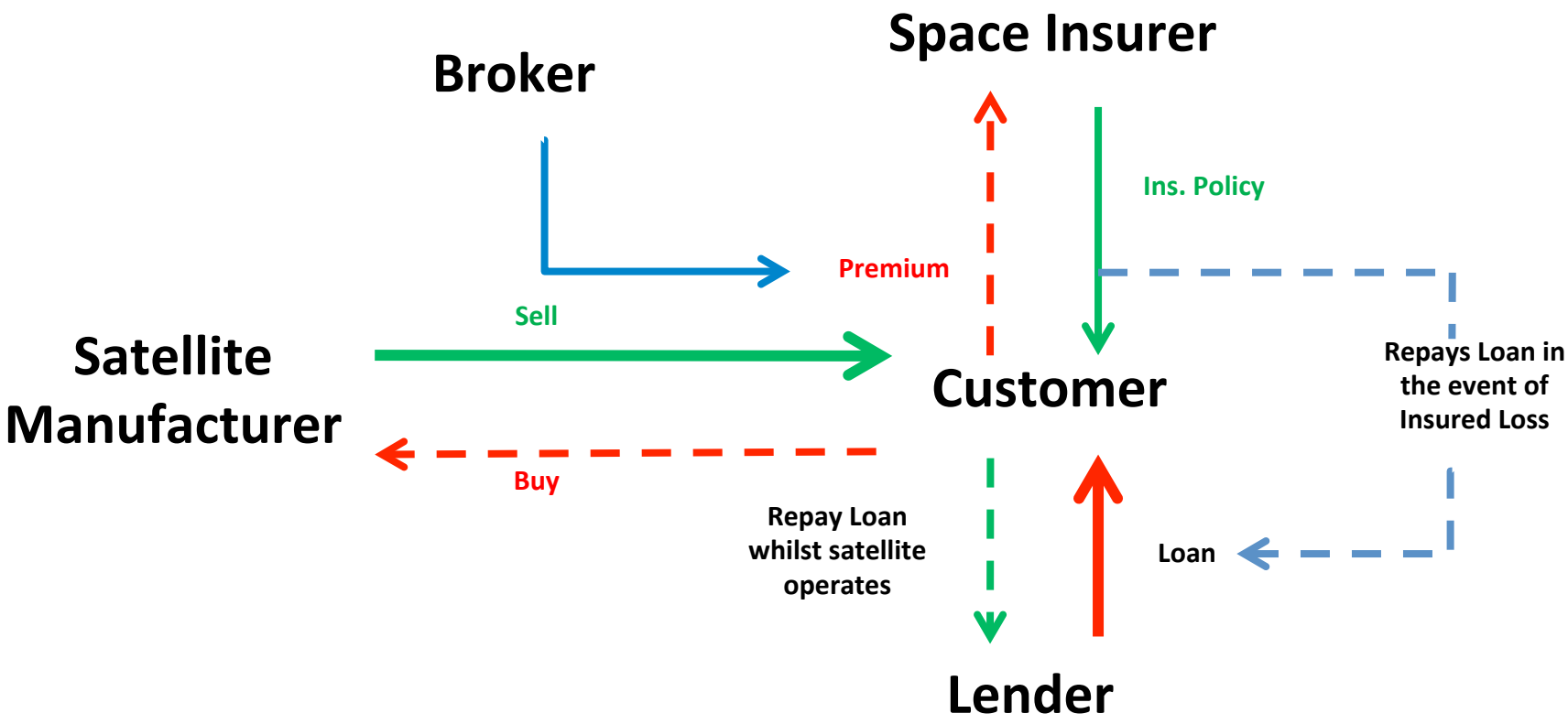
Draft insurance contract

Field underwriters questions

Create coverage design for commercial risks

Assist in preparing technical briefing

Insurance Broker



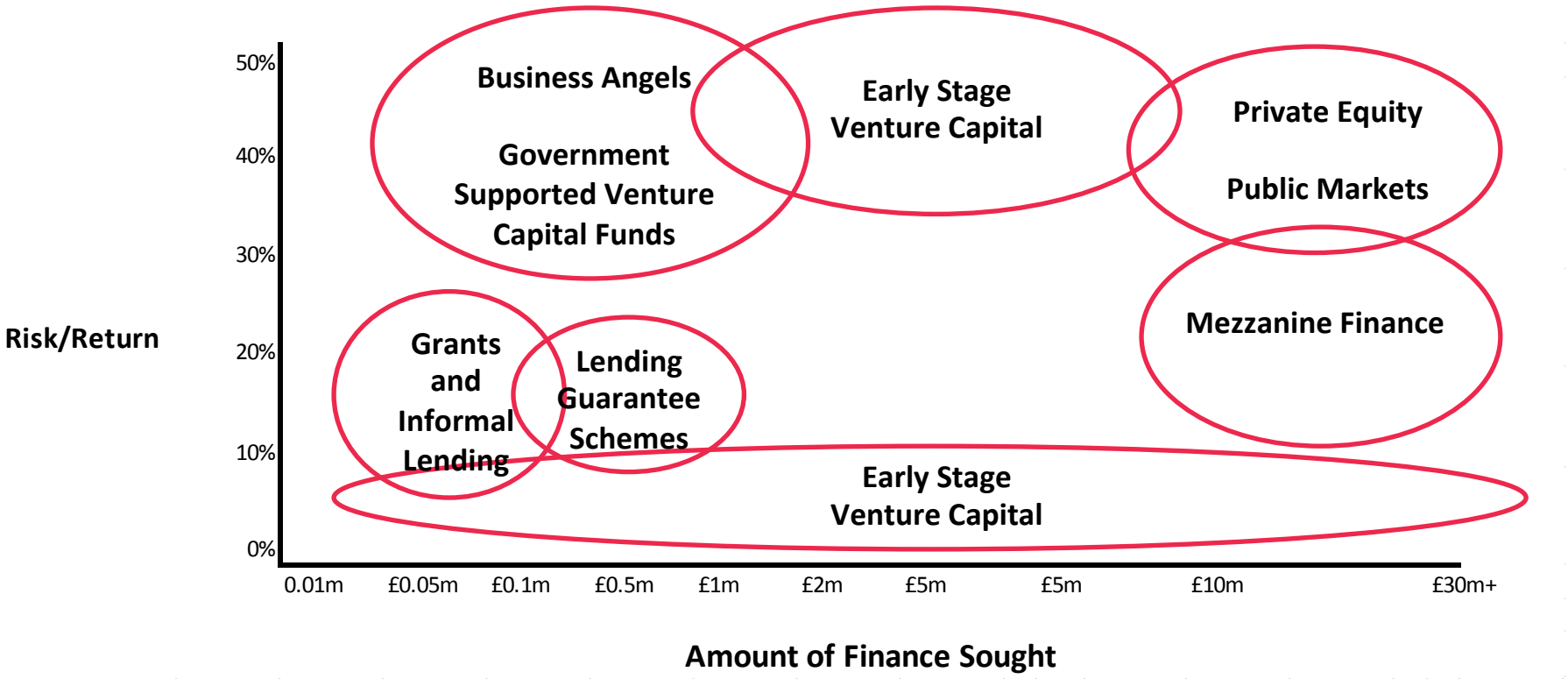
Law Firms

- Some free advice/generally limited
- Transactional advice regarding
  - Regulatory matters
  - Structuring loans
  - Commercial contract negotiation
    - Non disclosure agreements
    - Satellite purchase agreement
    - Launch service agreement
    - Transponder lease agreements
    - Other commercial contracts

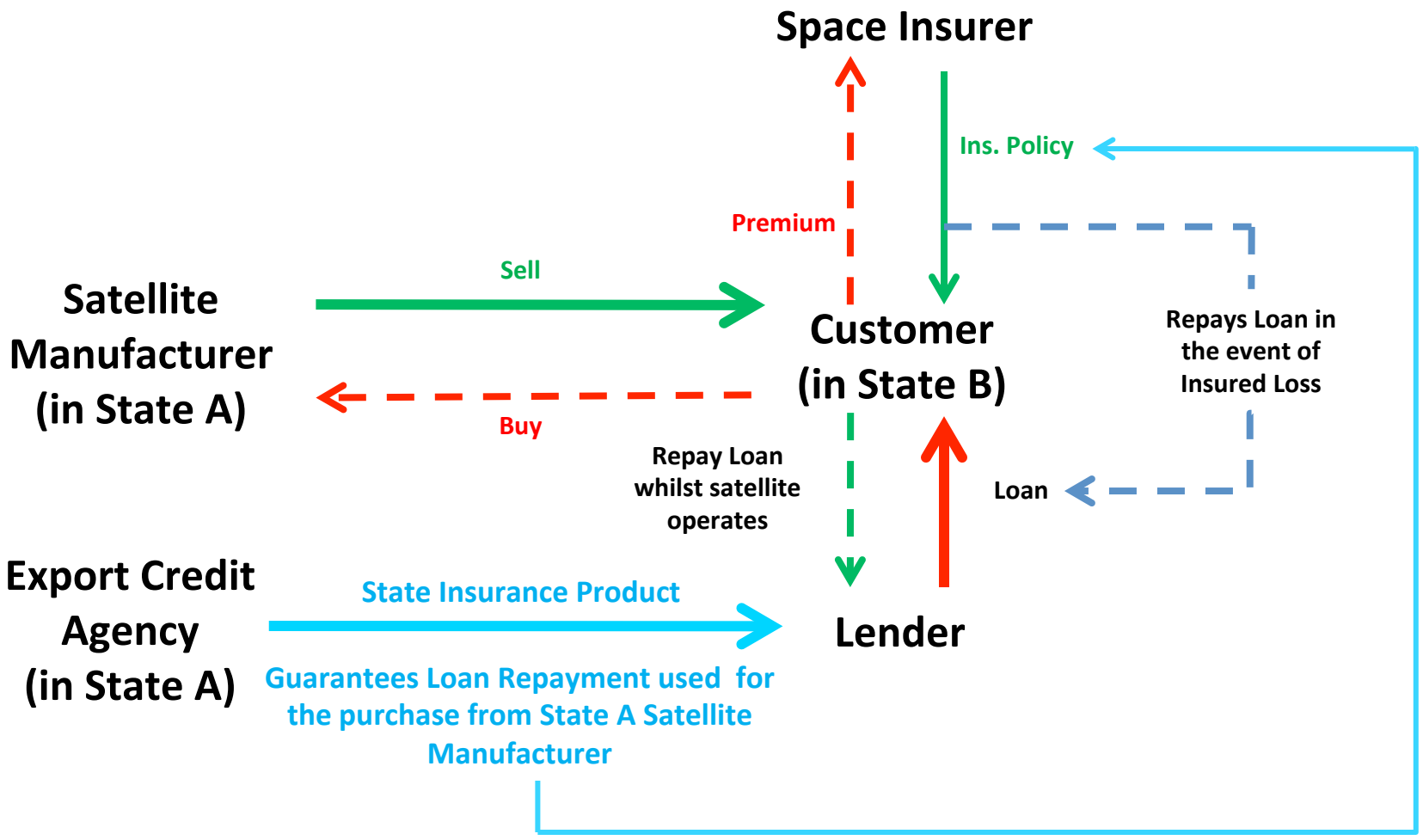
Raising Finance

- Basic costs
  - Operating capital
  - Satellite manufacture
  - Launch Service
  - Insurance premiums
- Raised from a number of different sources
  - Grants and informal funding
  - Lending guarantee schemes
  - Business angels
  - Early stage venture capital
  - Private Equity/Public markets
  - Mezzanine Finance
  - Bank Finance

Raising Finance



Role of Export Credit Agencies



Procurement Advice

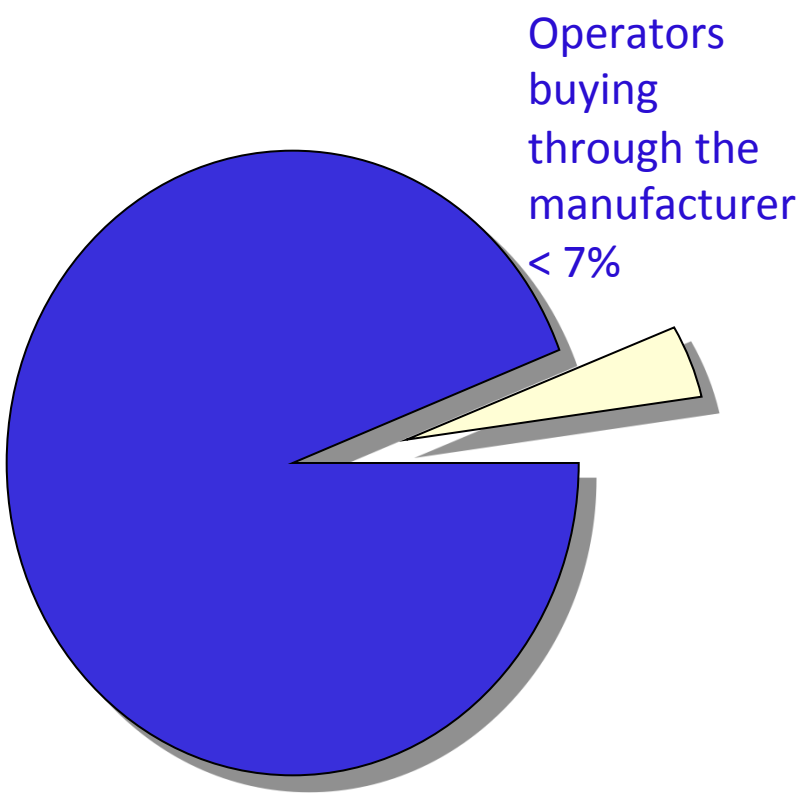
- Goods and services
  - Satellite
  - Launch service, Lawyers, Brokers, Experts
- Usually commences with a request for proposals (RFP) procedure
  - Satellite manufacturer selection
  - Launch services provider
- Beauty parade
  - Lawyers
  - Brokers
  - Technical experts

Satellite Contracts

- Minimising your exposures may not always reduce your costs but it can prevent costs increasing
- Satellite Contract is the more important of the two main contracts because it contains provisions relating to transfer of risk and transfer of property
- No transfer of property under the launch service agreement because it is a contract for service
- Launch insurance provides protection for the exposures that arise under both contracts but the terms of the satellite contract generally govern what goes into the policy

Satellite Procurement

- Careful consideration of the terms of contracts can lead to cost savings for insurance purchase
- Different considerations include
  - Delivery on ground
  - Delivery in-orbit
- Insurance procurement can be handled by
  - Manufacturer on behalf of the customer
  - By the customer



Satellite Contracts and Risk Transfer

- Transfer of risk of loss is the most important issue to consider
- Costs and consequences of launch termination:
  - The satellite may suffer damage
  - The launch insurance may be exposed
  - The satellite may need to be sent repaired / retested
  - The satellite needs to be covered after launch termination
  - The satellite will need to be protected after the terminated ignition on an all risks of physical loss or damage basis until the next launch attempt
- Transferring risk of loss at launch should mean the buyer has no exposure to launch termination costs

Satellite Contracts and Risk Transfer

- Accepting risk of loss at intentional ignition means buyer is likely to be responsible for all costs associated with terminated ignition
- Launch insurance (10-20% premium rate) exposed / Pre Launch Premium rate is 0.35-0.5%
- If there is a claim under the launch policy cover will have to be topped up for the restored launch.
- Most efficient way to cover the risks associated with a launch termination is for the manufacturer to provide pre-launch cover up to launch

Satellite Procurement – How to Reduce Insurance Costs

Amount of Insurance for next launch is reduced by the claim amount – will need to top this up

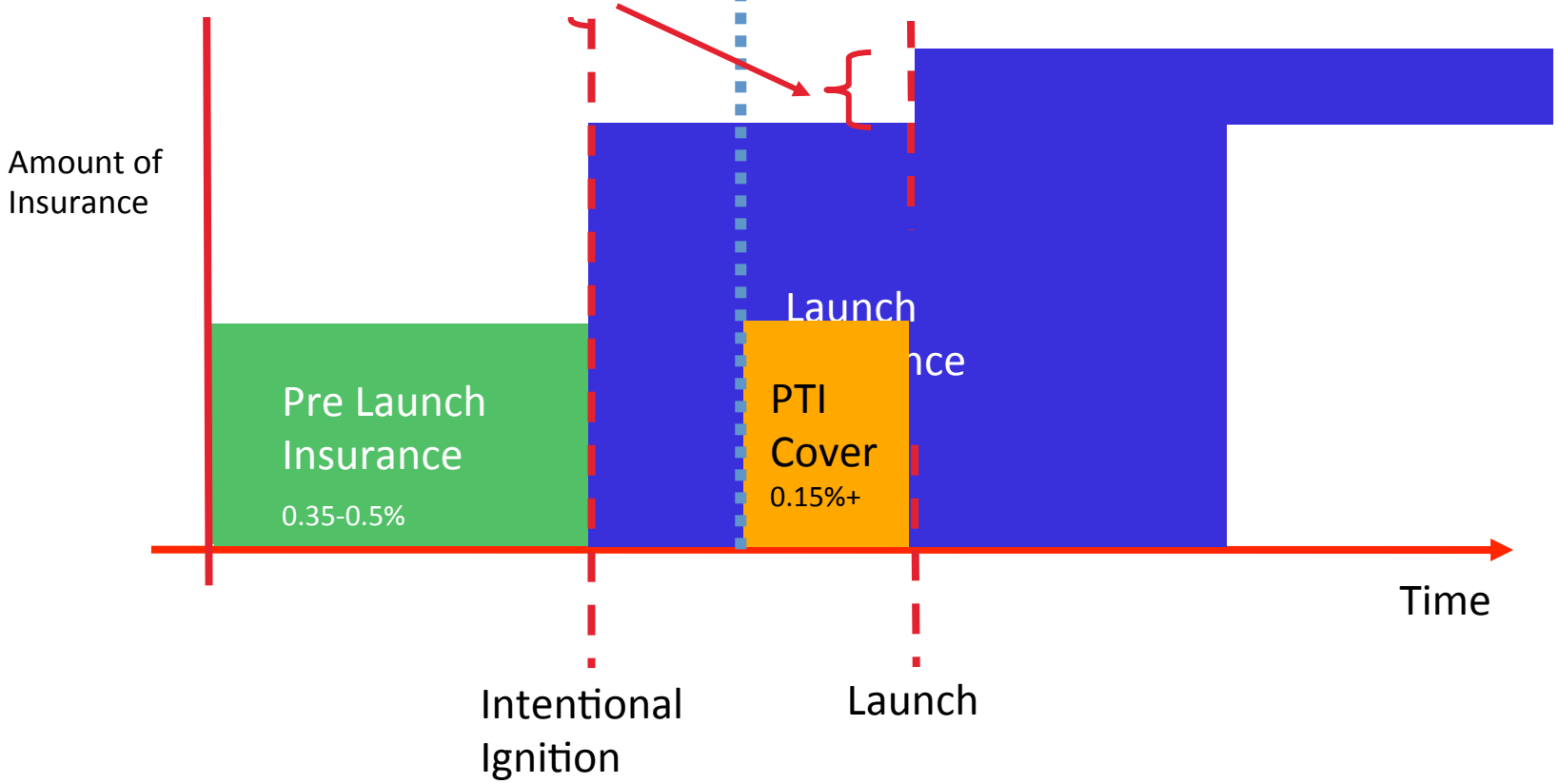
Loss takes place here

Launch campaign exposed

Have PTI cover

Amount of insurance will be reduced for next launch

Amount of Insurance is not reduced



Performance Warranties / Incentives

- Performance incentive clauses often appear to be a good idea
- Introduce an element of risk for the manufacturer that will inspire them to take more care over building the satellite
- Most manufacturers insure their incentives which defeats the purpose
- Solutions
  - No incentive plus contract price reduction - ask for an incentive as an option exercisable as late as possible
  - Incentives plus “no-insure” provision to prevent the manufacturer from negating the purpose of the clause

Launch Service Agreements

- Launch Service Agreement is usually less controversial contract
- Points to consider in launch services agreements include:
  - When the launch fee is earned
  - Who has responsibility for refurbishment costs
  - Launch Risk Guarantee provisions
- Launch risk guarantee provisions
  - Not all launch service providers offer launch risk guarantees
  - Does the LRG represent good value?
  - Compare price of LRG option against the price of cover in the market.
  - If offered as an Option try to exercise as late as possible in order to compare the market

Buy expertise

- Technical consultants
  - Add oversight to improve mission success
  - Adds credibility to project
  - Increases attractiveness to lenders
    - Satellite operators like Telesat
    - Consultants like Mott Macdonald
  - Increases costs but increases chances of success