Economic impacts of national space legislation and the establishment of fair conditions for commercial activities

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Why space legislation?

• Space activities are highly risky and commercial activities are growing >
  >The state must control that commercial activities will not compromise national security and international relations

• Space legislation is passed to ensure general application of international obligations >
  >Legislations stipulate authorisation, supervision and registration and allocate responsibility and liability between state and private parties

But also:

• National legislation can support competitiveness

• Can national space legislation facilitate business?
Three elements with economic impact

- Authorisation mechanisms: types of licences and authorising bodies
- Supervision:
  - *a priori* control: technical, financial, moral requirements, insurance
  - *a posteriori* control: supervision during operation
- Liability: calculation, caps, state warranty
Disparity

• Same contents but different approach

• National legislations address different national realities

• Authorization and control competences are allocated differently in each country. Different degrees of power

• Liability allocation responds to different criteria according to the country specificities.
Some scenarios

a) All embracing legislation
Covers private activities, public programmes and military action
Establishes the national space authority > charged with authorisation > authorisation
criteria on a case by case basis
Other requirements depend on general law or other ministry
E.g. Ukraine

b) The exhaustive launch act
Focuses only on launch activities
Detailed in authorisation and control procedures with authorities competent for that
purpose.
Includes detailed insurance and liability criteria.
E.g. Australia

c) Dedicated acts
Different space activities are addressed by different acts and authorities
Rules for control procedures and authorisation requirements
Detailed insurance and liability requirements
E.g. US
Types of legislation

Public to private allocation of responsibility depends on the development of national commercial activities

<table>
<thead>
<tr>
<th>Types</th>
<th>Activity development degree</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Ad hoc</td>
<td>Hypothetical</td>
<td>Swedish Act on Space Activities (1982)</td>
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<td></td>
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<td>Swedish implementing decree on Space Activities (1982)</td>
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<tr>
<td>Extensive but non-exhaustive</td>
<td>Potential</td>
<td>Belgian Law on the Activities of Launching, Flight Operations or Guidance of Space Objects (2005)</td>
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<td>Dutch Space Activities Act (2006)</td>
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<tr>
<td>Extensive and exhaustive</td>
<td>Real</td>
<td>French Law relating to space operations (2008) and Decree on authorisation (2009)</td>
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Consequences for every country

General

• Uncompetitiveness vis a vis more lenient/non-existing regimes
• Polarisation of the market
• Exhaustive legislation may rubberstamp existing practices, create national champions, foreclose markets
• Open legislations may favour dominant companies/may attract other companies
• “Space operations” are focused on launching

Authorisation related

• Uncertainty whether authorisation will be granted
• Reformulation of business culture
Consequences for every country

Liability and Insurance

• Risk of passing unlimited liability onto commercial actors

• No insurer can bear unlimited liability and may let commercial actors out of business

• Liability caps improve competitiveness Some laws foresee liability caps according to different criteria: *ad hoc* decision (Belgium), fixed amount, insured amount (different criteria to fix required insurance)
Consequences for every country

Liability and state warranty

• Who pays over the liability cap? Some States foresee State indemnification

• State indemnification was introduced in the U.S. to support creation of commercial activities. Now France has adopted it, if lifted away, uncompetitiveness
Consequences for every country

Commercial space activities do not abide by market rules:

- Few players
- Public involvement is still very high

Case by case assessments are still feasible and not necessarily discretionary

National legislation must match national space capacity

But:

Preservation of national interests must not undermine competitiveness

National interests must not push unfair dominance.

No rules to protect industry but legislation to allow the same competitive level as others.
Space regulations, the next regulatory level for space

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
<th>Regulatory instrument</th>
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<tbody>
<tr>
<td>Space activities <em>stricto sensu</em></td>
<td>Implementation of International obligations</td>
<td>Space legislation</td>
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<td></td>
<td>Protection of public security interests</td>
<td></td>
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<tr>
<td>Space activities <em>lato sensu</em></td>
<td>Market regulation</td>
<td>Non space specific regulation but relevant to space related activities</td>
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<td>Protection of civic rights</td>
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Space legislation goes beyond outer space

The commercialisation of space activities has spurred the development of space applications:

- Satellite TV broadcasts
- Satellite broadband
- Navigation
- Encryption
- Cartography
- Meteo forecasts
- Integrated uses…

They have increased the demand for interoperability > increasing need for regulation
Scoping regulations

Space regulations are:

• All other rules binding or not
• applicable and essential to the functioning of space goods, applications and services
• not necessarily specific to space

a) Space may need a regulations of their own
b) Space may need a chapter of its own in the general law
c) The general law may apply by itself equally to space
Regulatory challenges

Data Policy
- How to regulate data distribution for the development of competitive downstream markets?

Radiofrequency regulation
- How to find the compromise between liberalisation and regulation of a scarce source?

Export Control
- How to formulate a fair balance in space related dual use goods?

Standardisation
- How to achieve respected common standards for a dynamic market?
Final conclusions

• The geographic scope of space markets is global

• Adequate regulation can facilitate: Interoperability Innovation Further integration of space assets

• The lack of adequate regulation can facilitate the foreclosure of markets, reinforce dominant positions and impede the development of new products.

• The disparities between different national regulatory frameworks creates competitive advantages/disadvantages

• Harmonisation is essential for providing a level playing field for commercial space actors
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