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OECD Futures Project

The Commercialisation of Space and the
Development of Space Infrastructure:
The Role of Public and Private Actors



OECD

- 30 Member countries: Europe, North America, Asia
- Promote international co-operation
- Advise Member governments on economic, social and technological policies

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OECD

- Unique structure: about 200 committees, working groups and expert groups
- Attended by some 40,000 senior officials from national administrations
- Supported by OECD Secretariat (about 1600 people), committees and working groups discuss wide range of policy areas (economic, scientific, social, education, trade, agriculture, development, etc.)



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OECD International Futures Programme (IFP)

- Created in 1990 to help governments address the challenges of the future
- Identify and explore new, emerging policy issues
- Reports directly to the Secretary-General of the OECD
- Multidisciplinary team
- Involvement of the private sector

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Futures Projects: The Process

- Extensive Consultation
- Preparation of a project proposal
- Organisation of a kick-off meeting
- Creation of a steering committee
- Preparation of background reports
- Drafting of final report and recommendations to Council

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Rationale for the Project

- Growing strategic interest in space.
- Potential for significant economic, social and environmental benefits.
- Considerable uncertainties facing both public and private actors
- Need for a broad-based forward-looking policy-oriented review of future commercial developments in the sector.

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Project Objectives

- Provide an assessment of the long-term prospects of the sector.
- Identification of promising applications.
- Implications for supportive measures.
- Implications for reforming the legal/regulatory/policy framework.
- Strengthening of international co-operation.





Why the OECD

- Neutral informal forum with recognized consensus-building capability.
- Most key players are agencies of Member governments or incorporated in the OECD area.
- Brings into the discussion all key public players, including user departments.
- Expertise in dealing with broad range of public policies issues related to the operation of markets: *e.g.* economic, finance, competition, trade, technology, environment....



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The Process

- Consultation with key players in the public and the private sector.
- Preparation of a project proposal.
- Exploratory colloquium on 23 Sept. 2002 for launching the project.
- Creation of a project steering group
- Two-year project starts in April 2003
- Final draft report and recommendations end 2004, and communication to the OECD Council by

April 2005



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Overall Approach

- Project Team
- Steering Group
- Working Group
- Non-OECD Participants
- Financing of the Project
- Time Horizon



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Participation

- Space Agencies
- Science & Technology Ministries
- Other Interested Ministries (Economics, Health, Education)
- Private Sector
- International Organisations

Participants in:

OECD Futures Project on the Commercialisation of Space: The Role of Public and Private Actors

AS OF JULY 2003

	France: CNES	Netherlands: Ministry of Economic Affairs Ministry of Health, Welfare and Sport ING Bank	UK: British National Space Centre British Telecom
Australia: University of South Australia	Germany: Astrium Space Infrastructure	Norway Norwegian Space Center	USA: Dept Of Commerce (NOAA) Lockheed Martin*
Austria: Federal Ministry for Transport, Innovation and Technology	Italy: Alenia Spazio Telespazio	Rep Korea: Korea Aerospace Research Institute	DG RESEARCH EUROPEAN COMMISSISON
Belgium SES GLOBAL Federal Office of Scientific and Cultural Affairs	Japan: MEXT* MPHPT*	Sweden National Space Board	ESA
Canada: Agence spatiale canadienne Ministry of Natural Resources	Luxembourg: Ministère de la Culture, de l'Enseignement Supérieur et de la Recherche	Switzerland: Federal Office for Professional Education and Technology	

*not confirmed

The OECD International Futures
Programme

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Main Phases of the Project

- Phase 1: Review of the current state of sector and assessment of its future evolution
- Phase 2: Selection and clustering of promising applications
- Phase 3: Exploration of business models
- Phase 4: Examination of legal and regulatory obstacles
- Phase 5: General conclusions and recommendations

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Phase 1: The future evolution of the sector

- Geopolitical factors
- Economic factors
- Social factors
- Energy & the environment
- Science & technology

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Geopolitical factors

- Space and home security
- Space and the resolution of conflicts
- Space and national sovereignty
- Dual-use nature of space technology

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Economic factors

- Rising income levels
- Growing mobility
- Growing pressures on natural resources
- Growing concerns about systemic risks

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Social factors

- Population ageing
- Move towards a knowledge society
- Health and educational needs of LDCs
- International migration

Energy & the environment

- Growing concern about the environment
 - Pollution
 - Global warming
 - Biodiversity
- Growing demand for energy
 - more efficient use (*e.g.* transportation)
 - new sources of clean energy

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Science & technology (S&T) Progress in:

- space S&T (*e.g.* propulsion, space-based communication)
- enabling S&T (*e.g.* robotics, nanotechnology, laser)
- competing technologies (*e.g.* fiber optics, cellular communications, aerial observation)

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Phase 2: the selection of promising applications (1)

- Prospects for existing applications
 - Telecommunications: broadband? Mobile?
 - Earth observation: new space-enabled GIS applications?
 - Navigation: application to transport/resource management/emergency services?
 - Combinations of applications

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Phase 2: the selection of promising applications (2)

- New applications
 - Telemedicine
 - Tele-education
 - Micro gravity research and manufacturing
 - Space tourism
 - Space solar energy

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Phase 3: business models (1)

- Standard business considerations
 - what is nature of the added value created?
 - who are the potential users?
 - what is the cost structure and profit potential?
 - what strategies can be used to establish and maintain competitive advantage?

Phase 3: business models (2)

- Other Important considerations for space
 - will technology be produced on target and meet expectations?
 - will the market for the offering materialise?
 - will the offering be superior to alternatives when they reach the market?
 - how is the project to be financed?
 - who bears the risks?

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Phase 3: business models (3)

- Government support
 - reduces private investment requirement
 - reduces private sector risk
 - creates new business opportunities
 - develops new public infrastructure

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Phase 4: Improving framework conditions (1)

- Improve space policy by:
 - giving a greater voice to users in the formulation and application of space policy
 - a clearer recognition of the role of the private sector
 - creating a more stable and predictable policy environment for business
 - a clearer allocation of responsibilities

Phase 4: Improving framework conditions (2)

- Improving space law and regulation
 - Dealing with international space law (*e.g.* public law v. business world, dispute settlement, liability issues, etc.)
 - Implementation of business-friendly national space laws (*e.g.* problem of different legal formulations and interpretations across countries)
 - Implementation of business friendly regulations (*e.g.* privacy, licensing and property rights)

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Phase 4: Improving framework conditions (3)

- Strengthening international co-operation for:
 - Development of space infrastructure
 - Reducing tensions on foreign investment and trade-related issues
 - The formulation of international standards

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Phase 5: Conclusion

- Promising applications
- Critical factors for their successful implementation
- Government actions for creating a more favourable environment