

esi
EUROPEAN SPACE INCUBATOR

The European Space Incubator

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Noordwijk, May 20, 2003


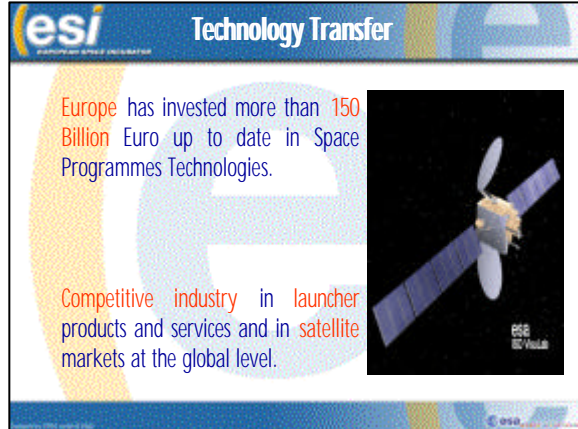


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Technology Transfer

Europe has invested more than **150 Billion Euro** up to date in Space Programmes Technologies.

Competitive industry in launcher products and services and in satellite markets at the global level.

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Technology Transfer

Is Space Technology transferable?

What?

How?

Why?



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Technology Transfer

Transfer of three entities:

- Techno (tangible embodiment)
- Knowledge (know-how)
- Rights (IP)



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Technology Transfer

Transfer of technology is:

- Incorporation
- Utilization



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Technology Transfer

Two main tools to facilitate technology transfer:

- Licensing (TTP)
- Venture Creation (ESI)



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ESA Technology Transfer:

- ESA Technology Transfer & Promotion Office (IMT-TP)

Technology Transfer
SPACE TECHNOLOGY IRIDES

- SPACE LINK Network 
- ARTES

ESA's Technology Transfer Network

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Vibration Detector made of Piezoelectric Foils (Mirov, D)

Space origin:
 Aerodynamic measurement of pressure distribution for re-entry simulation

Non-space application: Online failure detection system
 (pumps, printing and package machines, turbines and generators)

V.C.: 860 KEuro for a 26 % share T.O.: 20 MEuro by 2005

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Landing a Potato Chip

Space Origin:
 Aerodynamic modelling and computation for flight characteristics

Non-Space Application:
 Food packaging: 30-50% increase in speed



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Space-based solar racing car breaks 3 world records !



Average speed 91km/hr

Space Origin: Dual/triple junction AsGa (SMART 1), KEVLAR, MPPT, wind tunnel (car's drag coefficient: 0.01 < 0.30!)

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from 1989 onward:

- >160 technology transfers
- 2500 jobs are created (or secured)
- 40 million Euros were attracted
- >300 million Euros cumulative turnover (2004: 1 billion Euros)

Portfolio of > 450 identified space technologies ready for transfer and licensing (www.technology-forum.com)

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Venture Creation

Two perspectives on Venture Creation:

- The European Commission
- ESA Technology Transfer Programme

esi Entrepreneur Space Incubator **Venture Creation**

European Perspectives on Venture Creation:

In March 2000, the Lisbon European Council set an ambitious goal: Europe should be "the most competitive and dynamic knowledge-based economy in the world by the year 2010".

ERT (2002). Will European Governments in Barcelona keep their Lisbon Promises: March 2002

- SME 's and Entrepreneurship are seen as the engine of innovativeness.
- SME 's and Entrepreneurship create wealth and jobs.

esi Entrepreneur Space Incubator **Venture Creation**

ESA Perspectives on Venture Creation:

- Out of 160 transfers, 30 were the result of New Venturing
- Already created more than 250 jobs in 5 years time

esi Entrepreneur Space Incubator **Venture Creation**

ESA Perspectives on Venture Creation:

Trend:

Now more and more, venture creation is seen as a means to transfer space technology into non-space products and services –the ESI initiative as a logical reaction to this development.

"SPACE AS BUSINESS"

esi Entrepreneur Space Incubator **Venture Creation**

Ingredients: Entrepreneur + Cash + Network

- Unfortunately, entrepreneurs often lack adequate business skills or knowledge about the technology.
- Moreover, development in high tech as well as acquisition of IP involves high amounts of capital.
- A good network can meet both financial and support demands.

esi Entrepreneur Space Incubator **Venture Creation**

The creation of ventures may be supported by:

- Entrepreneurs own resources (Network)
- Venture Capitalist Organizations
- Business Incubation Programmes
 - 'Virtual Incubation' (TTP)
 - Business Incubation Centre

esi Entrepreneur Space Incubator **Business Incubation**

The Business Incubator

"A business incubator is an organisation that accelerates and systemises the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including: [access to finance,] incubator space, business support services, and clustering and networking opportunities.

By providing their clients [i.e. incubatees] with services on a "one-stop-shop" basis and enabling overheads to be reduced by sharing costs, business incubators significantly improve the survival and growth prospects of new start-ups."

Source: [modified], SES-EC Benchmark Report (2002)

esi Business Incubation

An incubator offers **cost-advantages** by sharing facilities and overheads.

An incubator acts as a **switching centre**, linking people and resources together.

By clustering access to support functions the incubatees do not need to "shop around", **accelerating** the start-up process.

A incubator is a place where **cross-fertilization** is stimulated.

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What does the European Space Incubator offer?

- Office Space
- Access to Finance
- Access to Technical Assistance (ESTEC)
- Access to Business Support (incl. Entrepreneurial Training)
- Hands-on Assistance
- Access to (international) network opportunities

esi European Space Incubator Network

ESI spearheads the European Space Incubator Network

eSINET

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ESI NET - Benefits

- Corporate Identity
- Share Experiences
- Access to ESI NET Funding
- Access to International Markets
- Access to International Network

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ESI Targets:

- (Proactive) Entrepreneurs
- Major (Space) Companies in search for Spin-off opportunities
- Partners: Networking

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ESI Entry Criteria

- Transfer or utilization of Space Technology / Systems / Ground Stations in the non-space environment
- Ethical Aspect
- Valid Business Concept
- Intention to create a New Business

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Selection Procedure

1. Idea submission (business concept)
2. Evaluation board (ESTEC Experts & Business Experts)
3. Invitation to submit ESI proposal

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Selection Procedure

4. Incubation at the ESI facility in ESTEC
5. RESULT: Business Plan, Technologically feasibility model
6. EXIT:
 - Equity investments take over
 - Space Business Park (2006/2007)

esi Sneak Preview: Space Business Park

- Next to ESTEC
- Business and Space Technology Valley (ESA, EU and local governmental support)
- Synergy between ESI and SBP:
 - ESI provides new high tech companies to be hosted in SBP.
 - and
 - The SBP allows ESI to offer its incubatees continuation after incubation period.

esi Network of innovation

Building the Network

Incubator is a Switching Centre of actors, resources and activities

"The Network is the Incubator"
Source: Koen Debackere – IMEC and Professor at KU Leuven Belgium (16-12-2002)

esi Conclusion

Benefits for Entrepreneurs:

- Cost Reduction (Incubator Feature)
- Accelerating venture creation (Network Feature)
- Access to techno and remote markets (Network Feature)

esi Conclusion

Benefits for Network

- Enhancing innovative character / entrepreneurial spirit (Quest for solutions)
- Deal-flow / Transactions
- Creation of jobs

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Conclusion

Benefits for ESA

Promotion of member states' technology base.
(Promoting a System of Innovation)

Benefits from space technology "down to earth".

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Future

One day pan-European products all over the world might feature a small but intriguing text on their coverings:



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