

# Partnerships for Sustainable Services



*Pictures: Arianespace, Galileo Industries, EADS Astrium, DLR, ESA*

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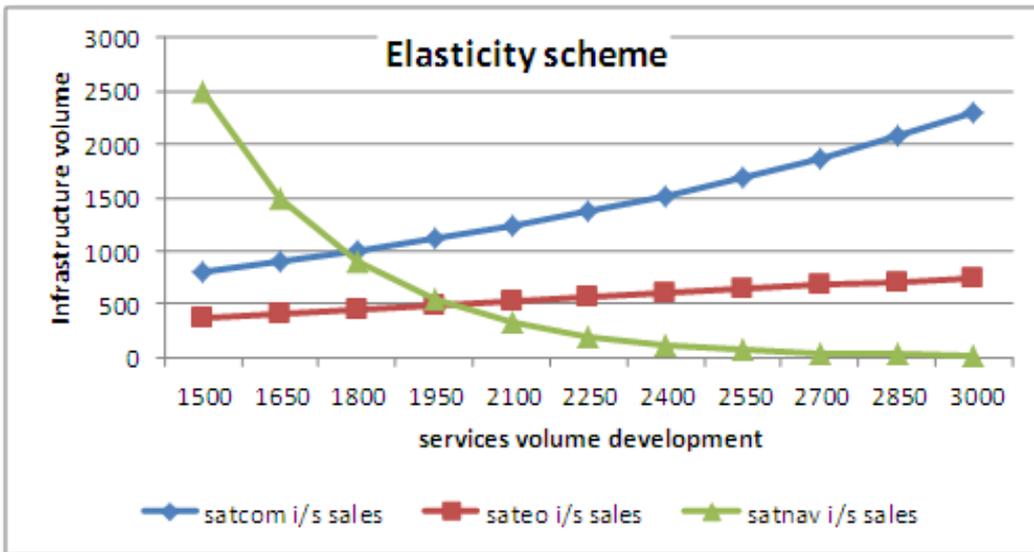
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- Past Experience
- Present Situation
- Paths to Sustainability— ESA / Investors
- Avoiding the Valley of Death
- Improving Business Cases
- Think Like an Investor
- Final Considerations

# Forecast of the European Space Sector



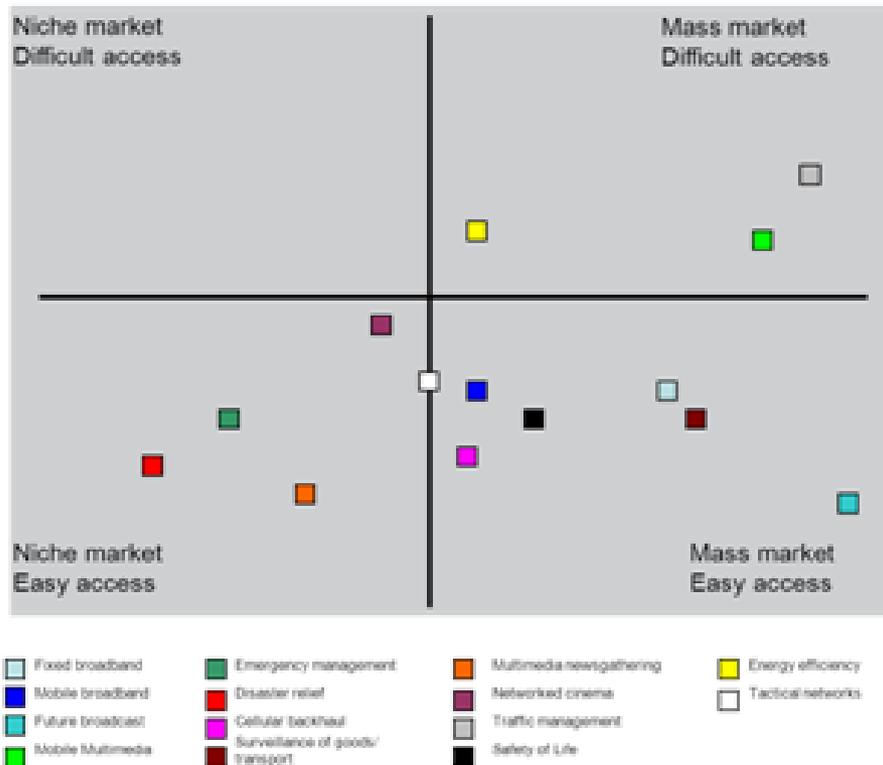
## Scenario development

- Quantified space sector return on investment
- Market evolution in 18 ESA member states
- Recommendations with explicit valuations

## Annual Profit and Loss Forecasts

- Macro and Micro economic effects
- Mapping of dynamic interaction among space stakeholders
- Infrastructure ROE and demand-driven consumer influences

# Emerging Markets and Future Applications



**Analyze new opportunities** for new services using satellite telecommunications

**Identify and characterize profitable upcoming opportunities,** new drivers, the evolution of demand, and key enablers

**Time Horizon: 2020**

- **Space-based services and applications** are sure to be an integral part of our technological age
- Downstream markets have been more elusive than expected in Europe
- Satcom markets are fighting fast advancing terrestrial alternatives



### Consensus that we should go beyond ESA's current programme capabilities

- The agency's aim is the launch of successful operational services
- BUT they only cover the development of new services **up to the end** of a pilot or demonstration phase
- There is a gap that must be bridged



- ▶ IAP's efforts are achieving results in funding innovative ideas in diverse areas (agriculture, telemedicine and transport)
- ▶ ESA—risk reduction by funding and nurturing innovative ideas out of the start up phase
  - ▶ ARTES 20 and IAP are user driven, linked to commercial market.
  - ▶ ESA welcomes 3rd party funding from external partners e.g. EIB, EDA
  - ▶ This strategy lessens risk to the private sector, incentivizing private investors to participate
- ▶ ESA “Seal of Approval”



- Five projects have now moved into an operational service or a preoperational phase:
  - Nuclear site monitoring – operational (IAEA)
  - FlySafe – operational (air forces and KNMI)
  - Tempus aeronautical telemedicine has spun-off a pre-operational IAP service AMAZON
  - Talking Fields – pre-operational
  - GrapeLook – pre-operational.



- Other programmes interfacing with private investors are
  - Open Skies Technology Fund
  - ESA incubators— six facilities spread throughout Europe.
- BUT, the Agency is constrained funding operational services within current programmes like IAP
- ESA is willing to find new solutions to promote venture creation
- **GOAL:** establish partnerships with a focus on sustainable business models, which benefit all the partners involved in ongoing service delivery



- Increasing co-funding from 3<sup>rd</sup> parties is critical
- Before committing capital in a partnership, investors need a clear view of:
  - How the return on investment will be generated
  - The risks and how those risks are mitigated (Co-investing with institution)
  - Competing strategies among partners (Exit strategies, size and duration of investment)



## Reasons to invest

- Downstream satellite based products/services and the spill-over of space technology to other markets has lots of mass market potential
- Market can quickly grow tenfold into a EUR 100 billion industry
- Space-based services are a better investment than other asset classes
- ESA “seal of quality”

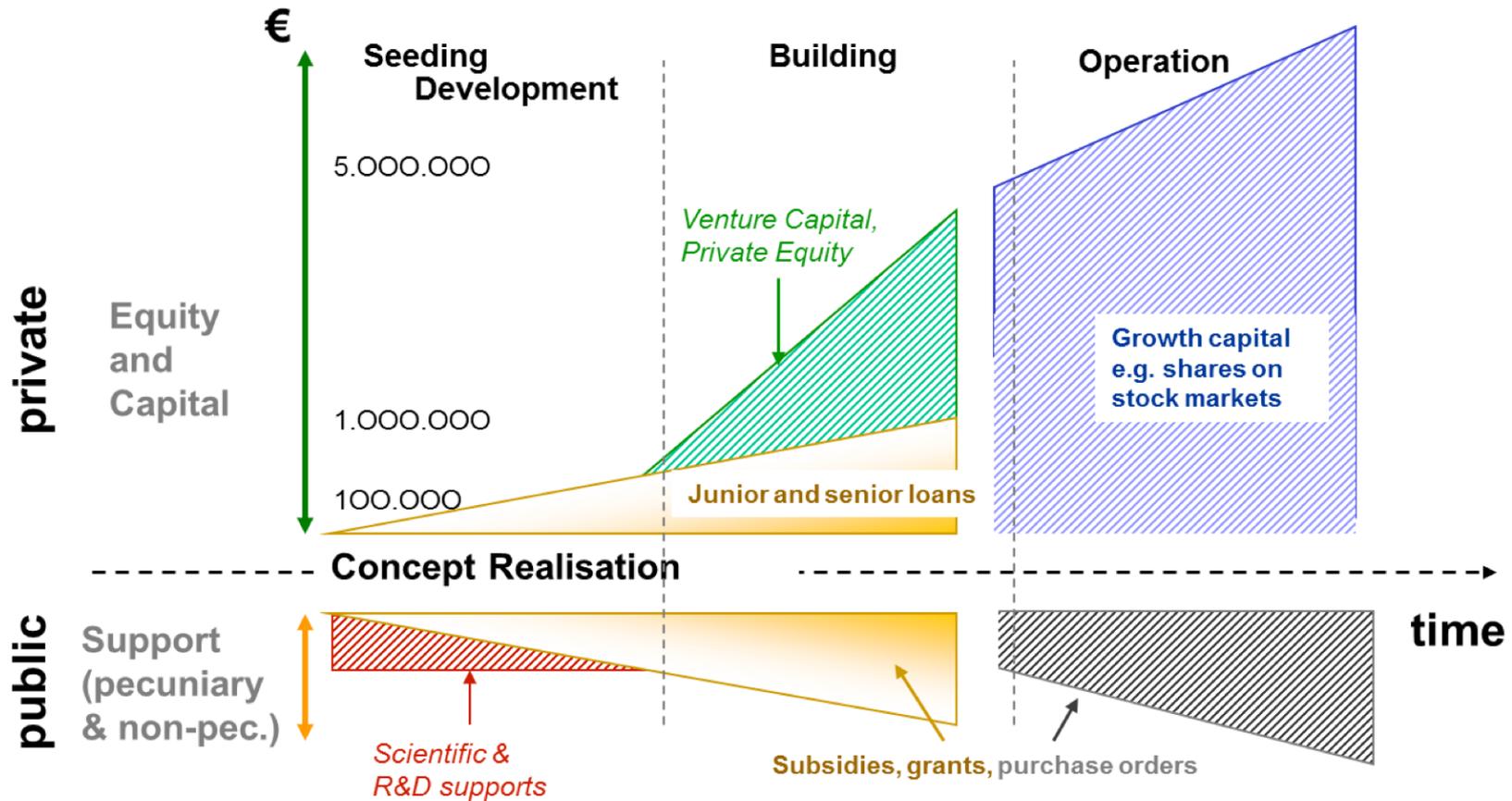


## ‣ Reasons NOT to invest

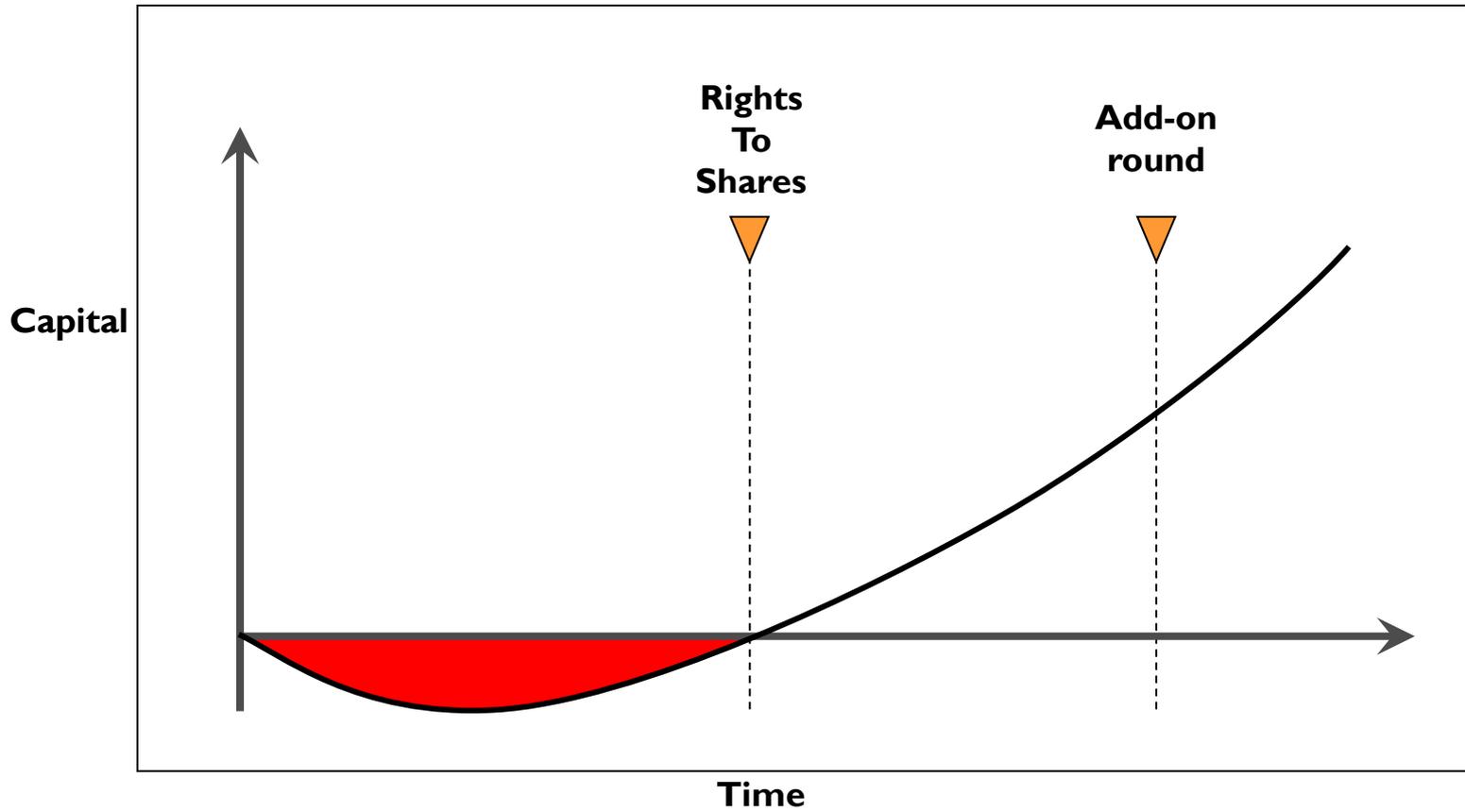
- perceived market risks
- operational compatibility with public bodies
- Valuation uncertainty (IRR, uptake of services)
- Lack of exit / too early / small niche
- Technical nature of management
- “What will I own if it fails?”



# The Equity Gap



# The Equity Gap



- Factors of the “Valley of Death”
  - Skill gap between developing and bringing a product to market
  - Management weakness
  - Weak partnerships to sales support or distribution
  - Lack of capital/ burn rate too high
  - Discrepancy of idea to service
  - Missing tie to megatrend or growing consumer market
  - 50% funding not enough



- **FACT:** The business case tends to be the weakest part of a proposal
  - Viability analysis
  - Gap analysis
  - Roadmap to launch
  - Accurate assessment of funding required
  - Commercialization know-how



## Considerations for improving the business cases— for all stakeholders:

- How can potential partners be screened for inclusion?
- What level of match-making/ business pre-operational services can ESA realistically provide?
- Can open competition be guaranteed?



ESA's structures need to produce companies that are **READY FOR INVESTMENT** after demonstration

- Treat the business case as a crucial part of product development
  - One expert in consortium
  - Funding needs established and targeted in advance
- Coherent strategy in place and on the way to execution



### Think like an investor

- ✓ What is the present/ future demand for the proposed service?
- ✓ Does it solve a problem?
- ✓ Who are the customers?
- ✓ What is the market?
- ✓ What is your targeted share?
- ✓ How will you arrive at that share?
- ✓ Are your revenues regular?
- ✓ Are there multiple clients?
- ✓ Can you explain the business in 100 words or less?



## Think like an investor

- ✓ What are the market risks and barriers
- ✓ Explicit take-up assumptions
- ✓ User profiles
- ✓ Direct competition
- ✓ Likely new entrants
- ✓ What is the cost base and how does it compare to revenues?
- ✓ Is this something special that I want to own?
- ✓ Does it fit my investing style?
- ✓ What is it worth? Why?



## Analyze risk

- Regulatory
- IP and legal
- Incumbents
- Geographical and cultural
- IT
- Staffing
- Disruptive technologies
- Can you survive the “worst-case” scenario and still build your business?



- ESA is very pro-active supporting innovation at many levels and eager for its projects to succeed
- Implementing partnership initiatives is vital for sustainability of the new services
- Increasing co-funding (particularly IAP demonstrations) is crucial to bridge gaps
- Think like an investor from the beginning— the quality of the business case will improve your ability to attract investor capital
- We have a historic opportunity to see space-based technology go mainstream at many levels of society