

NATIONAL SPACE CONFERENCE 2025

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Space for Societal Resilience, Transformation and Intelligence

DATE: 20 – 22 August 2025

VENUE: CSIR ICC, Tshwane, South Africa



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COMMERCIAL LEADERSHIP AND THE ORBITAL LAUNCH VALUE CHAIN IN SOUTHERN AFRICA – *FROM OBSERVER TO COMPETITOR*

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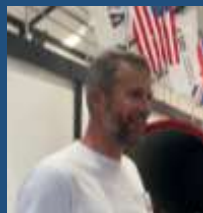
TECHNICAL SESSION 1

SHORT BIO

CEO/Founder with over 12 years of experience in finance, technology/industrial policy and manufacturing. Former Chairman of NewSpace Systems and current member of UCT Civil Engineering Advisory Board.

B.Sc. Eng. Civil Engineering (UCT, SA), M.Phil. Technology Policy (Cambridge, UK)

COMMERCIAL LEADERSHIP AND THE ORBITAL LAUNCH VALUE CHAIN IN SOUTHERN AFRICA –FROM FROM OBSERVER TO COMPETITOR



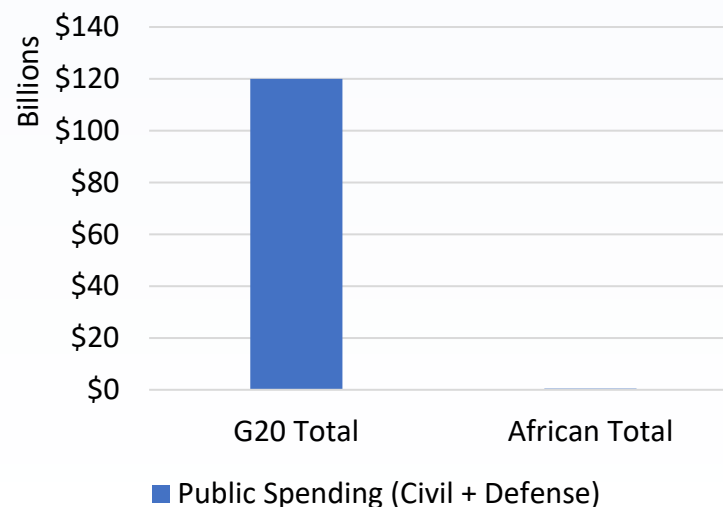
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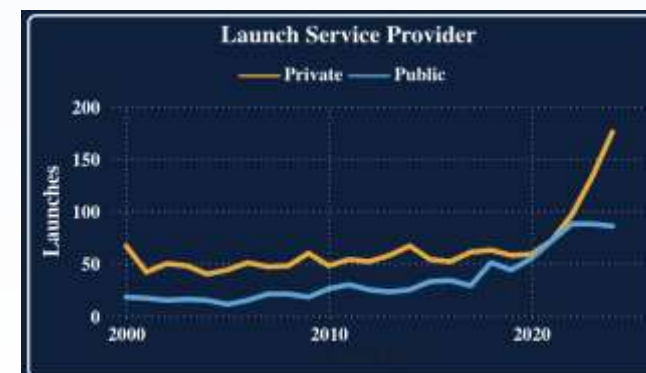
GLOBAL SPACE INDUSTRIAL REALITY

- Since 2017, private investment in space > **US\$50B**.
- G20 governments spend > **US\$120B annually**
- African governments spend **US\$420M** (~0.35% of G20)
- Without private leadership, Africa will remain behind and dependent
- Since 2000, > 15k spacecraft launched (~80% US/EU, ~13% Russia/China)

Public Spending (Civil + Defense)



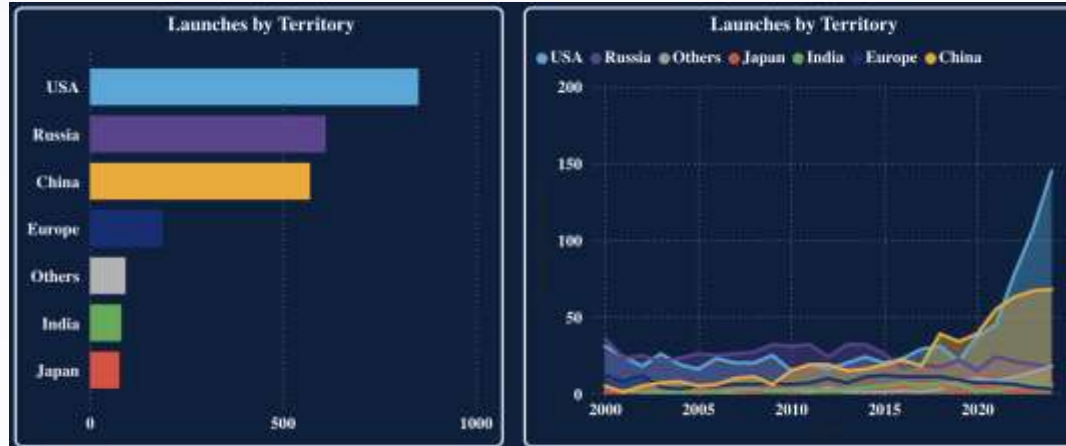
The future of launch is private



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GLOBAL LAUNCH ACTIVITY & MARKETS



- US/EU account for ~80% launches and ~63% of total mass lifted, followed by Russia/China at ~13% and ~23% respectively.
- We need friends: East, West, South & North.
- Data: [European Space Policy Institute \(ESPI\)](https://www.espi.eu/).



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FUTURE OF LAUNCH IN AFRICA

- No African orbital launch capacity or capability (public or private) - yet 😊
- Almost all industries / public services rely on imported satellite-based services (every sector of modern economy is interlinked with space industry).
- Addressing Africa's launch capacity and capability gap:
 - **Fiscal policy vector:** consumption/import → production/export
 - **Credibility:** neutrality, institutional stability, policy readiness, realistic market outlook, corruption/business index, policy execution etc.
 - **Talent & human capital:** openness to attract global, free flowing talent, capital, entrepreneurs; significant support for own entrepreneurial sector (*red tape reduction* is critical). *'A factory is just bricks; a runway is just asphalt.'*
 - **Capability:** Africa needs operational, competitive and commercial spaceports – and a launch value chain - to join the “new space race” – *various options available in southern Africa, several countries showing serious intent.*
 - **Capital:** private sector investment, strategic buy-in and innovation required.
 - **Coordination:** Successful commercial launch requires tightly coordinated action across multiple areas. See Appendix 1.



SA SPACE POLICY STATUS QUO

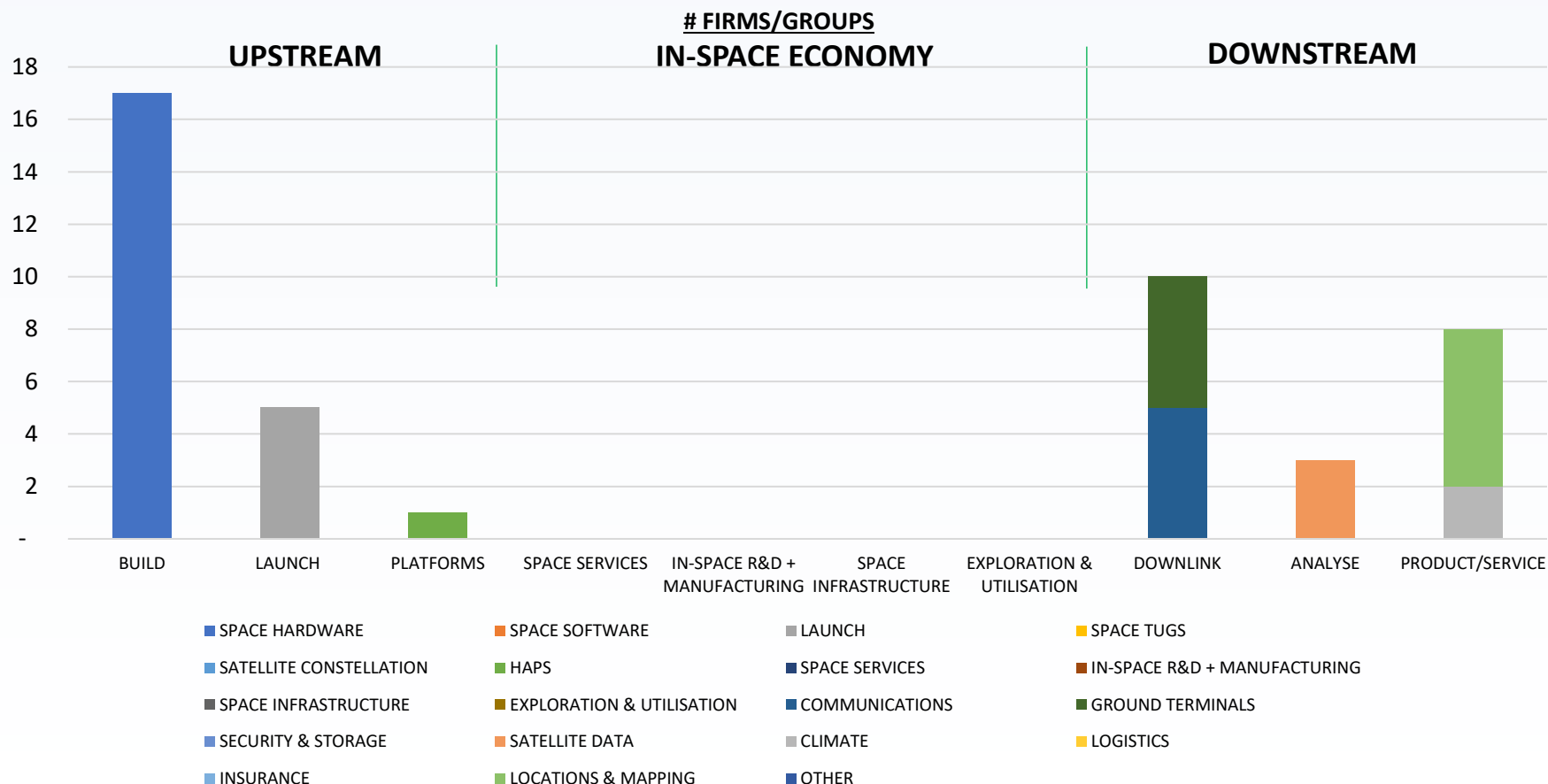
- Commercial launch sector and spaceport development is aligned with national space & industrial strategy and legislative direction:
 - National Development Plan 2030
 - DTIC National Space Policy 2008 -> launch readiness by 2018
 - Space Affairs Act 93/95 -> *SA Space Regulatory Draft Bill*
 - SANSA/Denel Strategic Plans -> launch readiness by 2028
- Can fix 'outcomes gap': space policy/ institutional alignment, and a relentless focus on implementation and enabling private industry.
- Strategic choices with significantly different probabilities of success:
 1. 'Tackle the challenge alone' (budget, standing start, tech diffusion reality)
 2. 'Tackle the challenge commercially, collaboratively and responsibly'
- 1. No great analogues for option 1. Countries like the UK, Norway, Sweden, Australia, New Zealand, Japan, Brazil, India etc. – option 2.
- Mura Space founded to play a catalytic role in supporting commercial Launch and Spaceport value chain for peaceful development in Africa.



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SA SPACE INDUSTRY STATUS QUO



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SPACEPORTS CAN LIFT NATIONS

- A competitive, multi-user spaceport is an 'ecosystem capability' offering horizontal & vertical launch infrastructure and facilities to private, commercial launchers or public sector customers and associated value chains for safe, appropriate and effective operations. Terrestrial spaceport infrastructure has significant space sovereignty implications for any country. See Appendix 2.
- The economic multiplier for sustained aerospace sector activity is likely more than double the highest for any sector in South Africa (the closest is construction, which has an economic multiplier of 1.9x)
 - R1 efficiently invested -> up to R5 gross output growth potential.
 - Growth of the commercial private space sector has a uniquely significant, positive potential impact on growth, exports, indirect employment, GDP, and tax revenue in the long run.
- Employment multipliers vary, literature suggests ~28 jobs / €1 million invested.
- Due to agglomeration and economies-of-scale effects, spaceports concentrate activity and investment and tend to *boost* multipliers. Trade offs: dispersion can weaken some impacts & reduce infrastructure competitiveness.

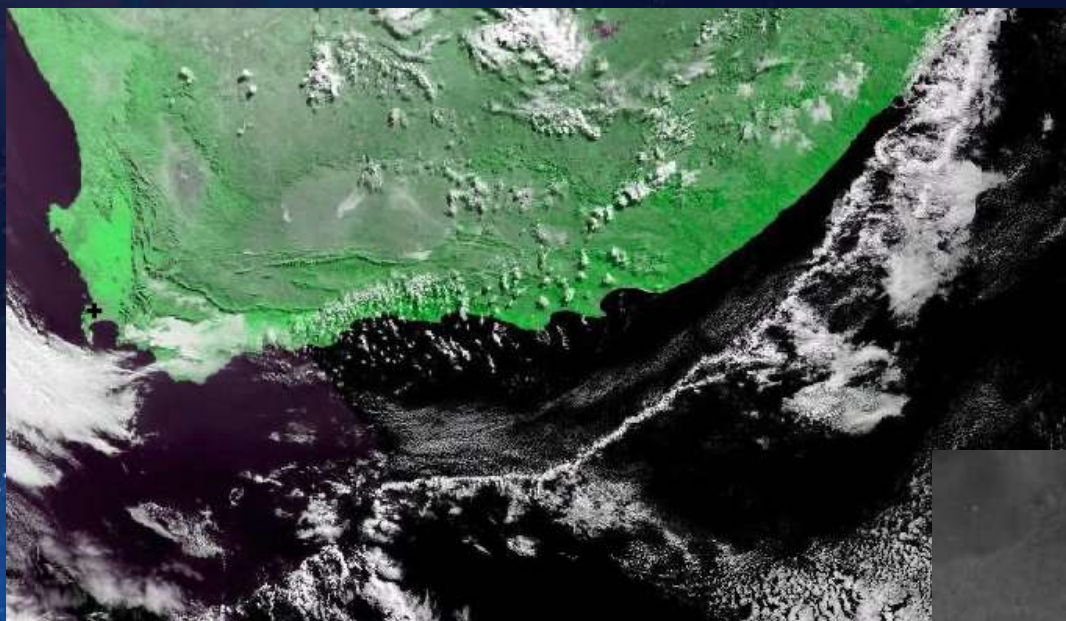




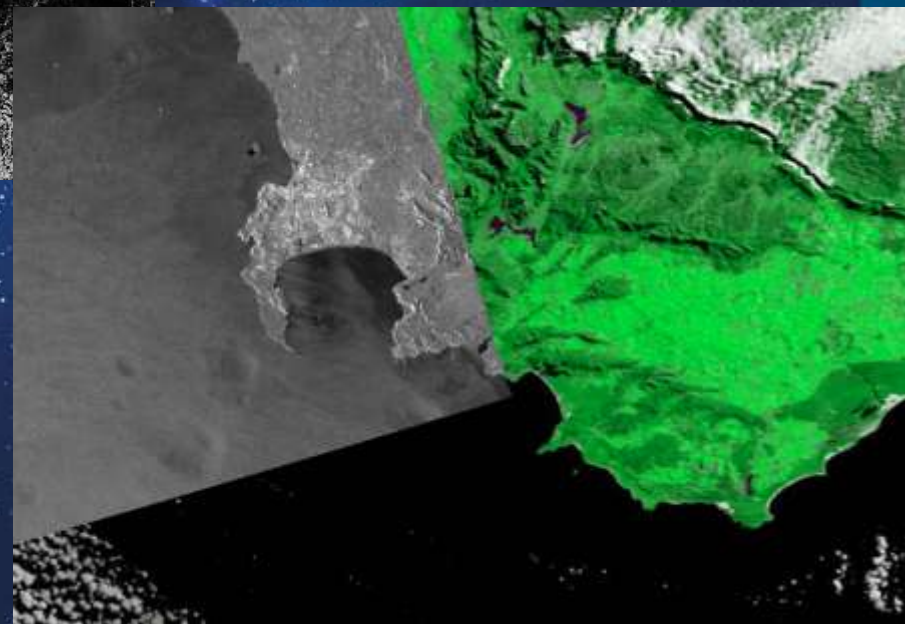
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MURA



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APP.1. SUCCESSFUL COMMERCIAL LAUNCH ACTIVITY MEANS COORDINATION ACROSS VARIETY OF AREAS

1. Private industry support, international collaboration, and public support essential for Africa's mission to space.
2. Commitment to peaceful, research-driven, and developmental space use aligned with MTCR and to implement robust, technology safeguards arrangements/agreements.
3. Peaceful sovereign programmes leveraging private sector innovation via "Skunkworks" model – can hand pick lessons from seven decades of human endeavours in space.
4. Competitive launch licensing regulations, public sector risk tolerance, and VISA schemes to attract space/aerospace talent & investment from all corners of the world.
5. Geopolitically neutral, commercially managed support infrastructures with international and domestic oversight/integration, benchmarked against global norms and standards.
6. Privately managed, dynamic and commercial spaceports that can offer frequent, competitive launch opportunities and an African base of operations for global launch providers and their suppliers or customers.
7. Bilateral, mutually beneficial partnerships for space sector innovation and investment with all main and 'mission critical' markets/geographies relevant for orbital launch.
8. Strong venture capital, banking, SMME support, property rights protection, technology safeguards arrangements, plus transparent and peaceful policy goals / objectives.



APP. 2. SPACEPORTS CAN LIFT NATIONS



A new space launch vehicle launch mount rebar – up to 300 tonnes (own estimate) of rebar utilised for launch-mount pile group + immediate superstructure.

Quantity similar in scale to a small to mid-sized marine wharf section (e.g., single wharf section at Durban Container Terminal)



A new space flame trench at Cape Canaveral -- more than 8 000 tonnes of concrete utilised.

Quantity similar in scale to a medium-size railway station with platforms (e.g., Marlboro Gautrain Station)

Imagery Copyright: Stoke Space (click image for link)



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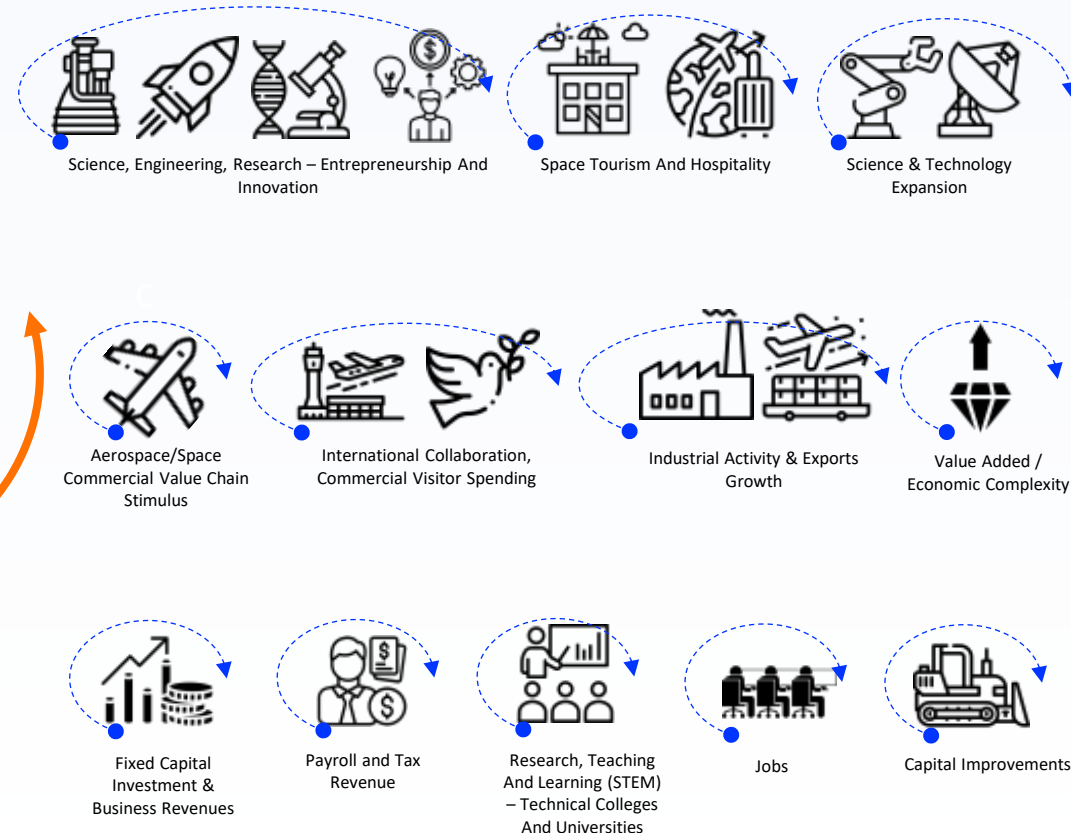
APP. 2. SPACEPORTS CAN LIFT NATIONS

SHORT TERM DIRECT IMPACTS



Commercial Spaceport
And Launch Value Chain
- Multiplier Effects If
Successfully
Implemented At Scale

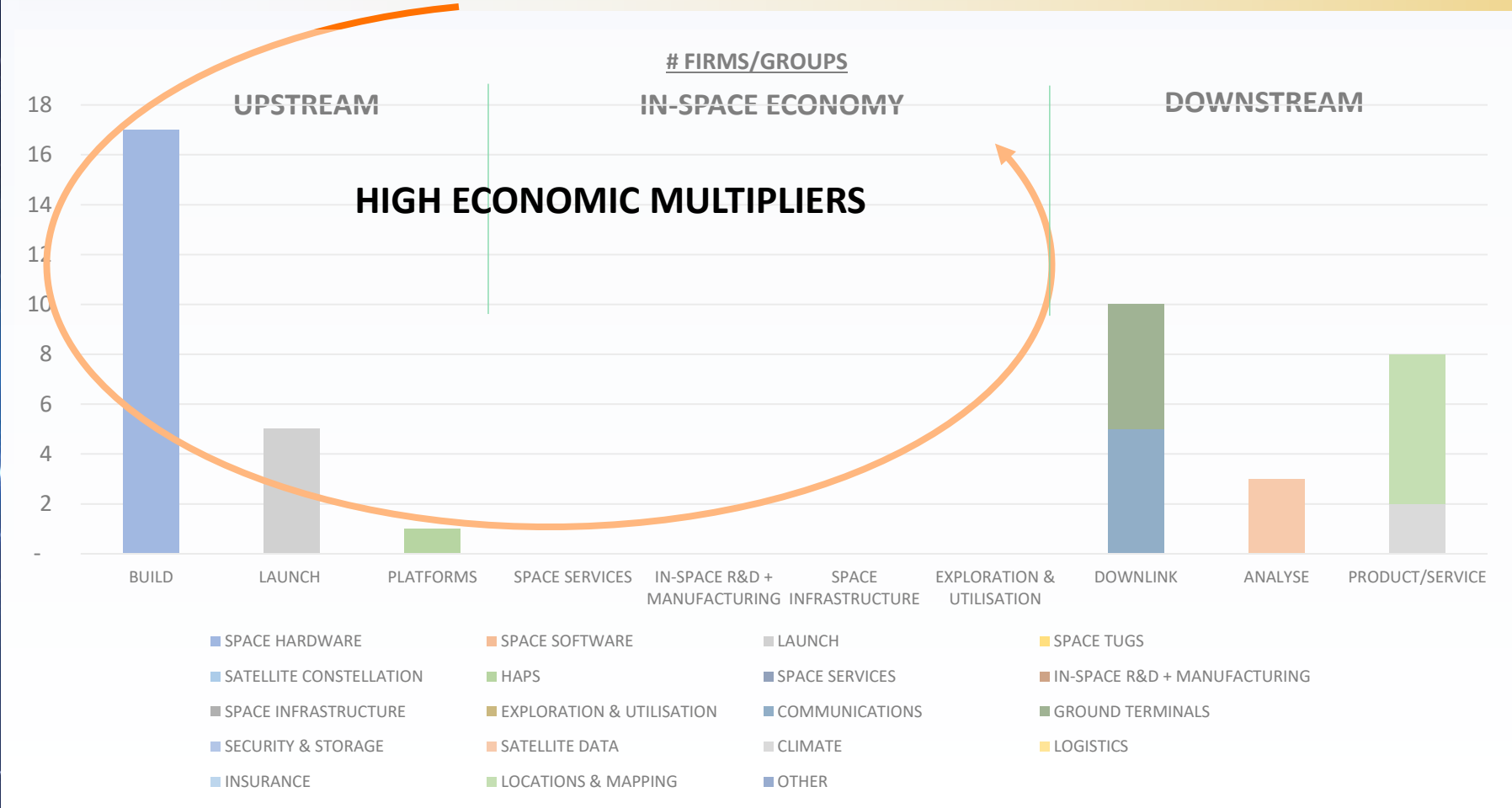
LONG TERM DIRECT AND INDIRECT IMPACTS



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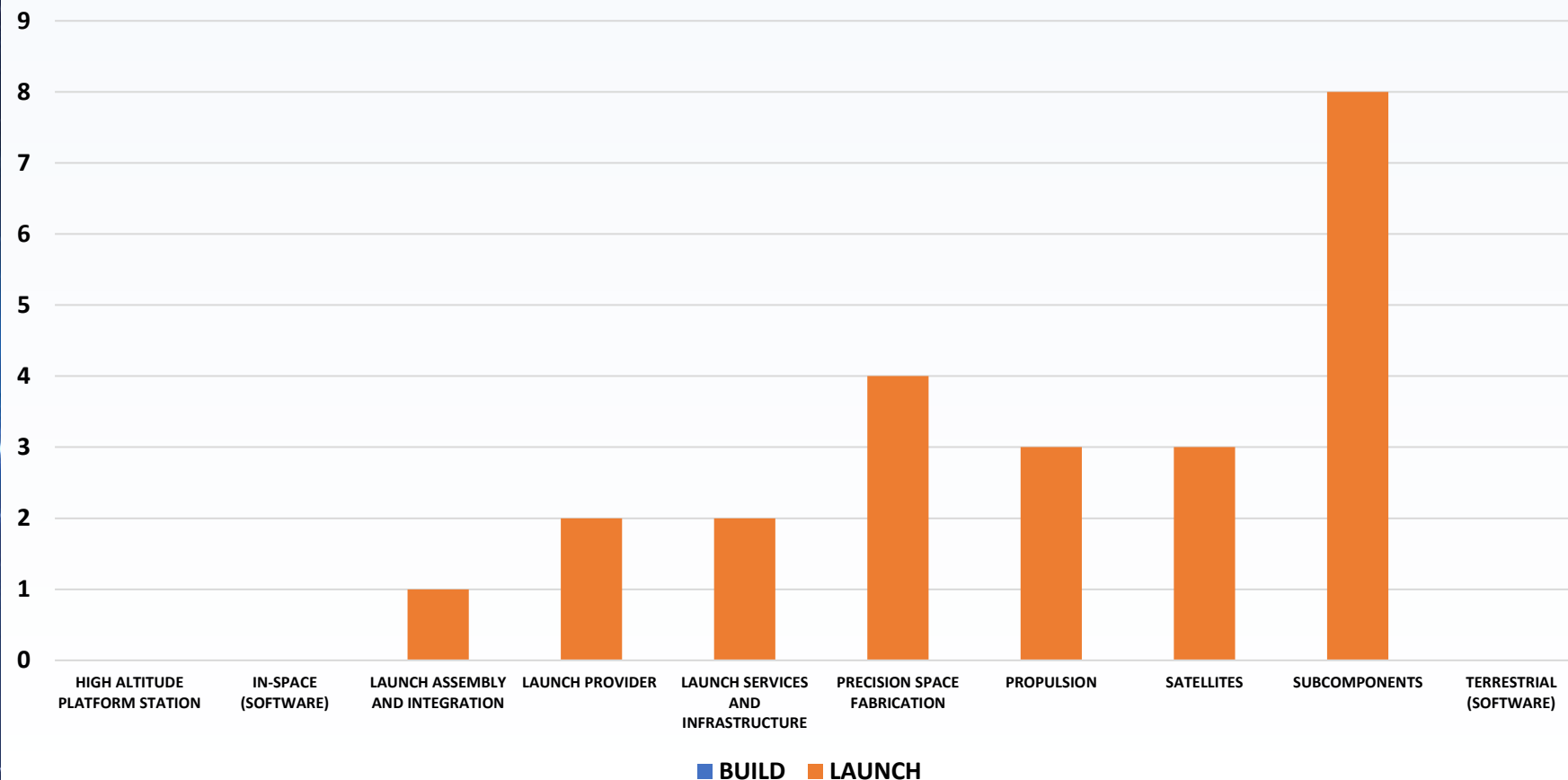


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APP. 2. SPACEPORTS CAN LIFT NATIONS

UPSTREAM BREAKDOWN BY ACTIVITY AREA



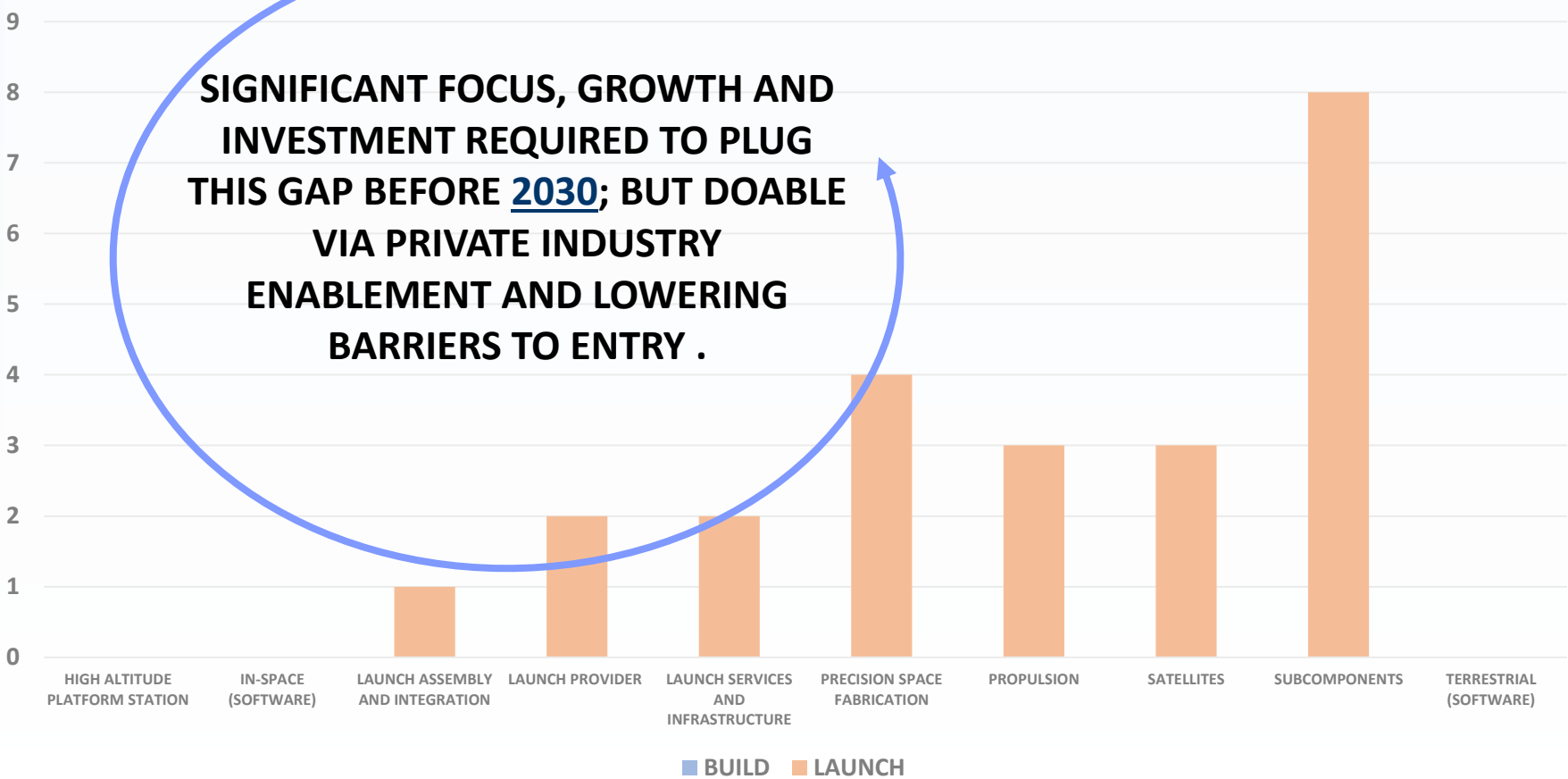
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- Multiplier analysis is simplest available macro economic tool to help quantify direct value creation from certain activities – space/aerospace have high multipliers that can be potentially sustained over longer periods (differs from construction in this regard).
- See also for discussion on multipliers in space and aerospace: South Africa Aerospace & Defence Masterplan 2020 or OECD Handbook on Measuring the Space Economy.

