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ENABLING SPACE BUSINESS INNOVATION THROUGH JOINT INTERNATIONAL SCIENCE
INVESTMENTS

Abstract

Early stage Space businesses experience difficulties in achieving commercial success due to legacy industry factors. The most challenging of these factors are the time and cost for developing Space technology and that the need for innovation and development often occurs before the existence of a market.

As a result, the ideas are often not attractive for venture or risk based capital the same way that software-as-a-service applications (SaaS) are. In addition, the technologies are typically more strategic and are considered to be sensitive or critical infrastructure to governments. In these circumstances the motives of private capital might be in contrast to what is best for the technology.

Governments are also risk adverse when investing in early stage technologies, fearing being locked into long term funding. This leads them to prefer the safety and security of big established businesses (primes) and buying ready technologies "off the shelf". This leads to several subprime outcomes:

- Research institutions having difficulty to spin out commercial space applications, instead keeping the research internal and curbing economic potential;
- Companies dying out because there is enough risk based or government funding to support them through long development and heavy capital expenditure at early stages;
- Large primes being able to buy small firms at a cut price and then sell the services and products back to governments with a heavy margin;

These outcomes have a greater downstream detriment to the industry with: governments being disincentivised from providing early stage investments, innovators and inventors finding it more attractive to spend time in established institutions or industries as opposed to a commercialisation pathway and large primes absorbing innovative young companies.

New Zealand, like other governments with smaller budgets cannot be locked into long term expensive space projects but we have a healthy commercial space industry which we would like to continue to nurture and develop.

In an effort to solve these industry problems, the New Zealand Space Agency (The Ministry of Business Innovation and Employment) jointly with DLR (The German Aerospace Center) developed a methodology for jointly funding innovation that fosters innovation and encourages sector growth while mitigating the aforementioned subprime outcomes.

This paper explores the methodology behind the joint investments by the DLR and NZSA, the initial results, the learnings and shortcomings and how it might change the way governments look at the financing of early stage innovative space ideas forever.