



Submission to:

HM Treasury - Consultation: [Financing growth in innovative firms](#)

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From:

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Background

As invited by Jon Sell and Martin Adams on 21 September 2017, AIRTO has responded with a number of key bullet points relating to the above consultation. This response has not been able to canvas views from AIRTO's membership in its entirety. However, the views expressed are based on practical experience with spinning out innovative products and services and new commercial ventures from research and innovation organisations; with raising and investing authorised venture finance funds (from both private and public sources) for start-ups and early growth companies; and with spinning out new commercial ventures from the university research base.

For the purposes of the consultation, patient capital is defined as 'long-term investment in innovative firms led by ambitious entrepreneurs who want to build large-scale businesses'.

1. Why do we need patient capital?

- 1.1 Some important innovations may take up to 15 years to mature to the point of commercial success. Obvious examples exist in medicine and life sciences, and areas requiring high capital investment in complex engineering, manufacturing and proving facilities. Offshore and renewable energy is a good example; satellite manufacture, launch and operation is another.
- 1.2 The funding needed to start-up, scale-up and sustain such ventures to the point of cost neutrality, and ideally profitable operation, is considerable and is usually supplied in tranches.
- 1.3 An early stage funder may have to wait many years for an exit opportunity and faces significant hazards on the way, including the risk of excessive dilution, poor treatment (and even oppression) as a small minority shareholder, changes of management team as new investors come in and forced exit through 'drag along' and 'tag along' provisions when time-limited investors have to realise their holdings as cash. The latter can occur for example when a typical 10 year closed fund has to exit according to a predetermined timescale, rather than when the company reaches the most appropriate stage of its development.
- 1.4 Such foreseeable hazards can deter early stage investors unless there is a clear and well-defined financing plan for all stages of growth, including through scale-up. This can make it difficult to get ambitious ventures off the ground in the first place.
- 1.5 To make a success of such opportunities, investors need to be able to:
 - 1.5.1 Handle the full range of investment rounds from very small to very large and to bear the proportionately higher overhead associated with smaller early stage tranches.
 - 1.5.2 Have sufficiently large resources to be able to follow their money through multiple rounds and thereby to avoid excessive dilution during scale up.

- 1.5.3 Have an investment mandate that does not require distributions to third parties at pre-set intervals or in a pre-determined timeframe.
- 1.5.4 Be of a size capable of diversifying their portfolio over multiple sectors to mitigate risk and to have the expertise to do so.
- 1.6 This calls for very large, 'evergreen' funds (such as Index Ventures) and/or very wealthy individuals investing on their own behalf (as is the case in the US with Elon Musk and Jeff Bezos for example); also, funds such as those being managed by Neil Woodford, that can address very long term, high capital investments and ride out changes in sentiment and prospects over long periods of time.
- 1.7 Patient capital therefore can smooth the journey through growth, avoiding some of the discontinuities, disruptions and distractions otherwise encountered when refinancing is triggered at the wrong time for the company, its management and even some of its investors.

2. How is this relevant to university spin-outs and novel propositions arising from other research and technology development sources and from projects within the Industrial Strategy Challenge Fund (ISCF) for example?

- 2.1 When setting off to commercialise the outcomes of challenging, radically new and potentially disruptive developments, such as those envisaged by the ISCF, it is likely that many will not fit immediately into the business plans of industrial partners and their established supply chains.
- 2.2 Licensing intellectual property to large supply side firms in the short term may therefore not be practicable and SMEs will not command the resources to take on the scale up and further development risks unaided.
- 2.3 This brings to the fore the need for third party equity finance because loans are usually inappropriate as SMEs and management teams do not have sufficient assets against which to secure the necessary borrowing and large companies frequently have to deal with covenants restricting their further borrowing.
- 2.4 The ISCF challenges are deliberately going for sizeable 'not business as usual' opportunities in areas where market demand is uncertain and market research is scarce; where natural supply chains have not yet formed and do not as yet exist. This all calls for investors with considerably up-scaled risk appetite, endurance to stay the course over potentially lengthy investment cycles and the ability to assess new and possibly unfamiliar technologies and markets. In other words, patient capital of a significant size and scope is required.
- 2.5 Given the availability of such patient investment over the life of the enterprise and provided there are sufficient protections for small investors 'pump priming' such ventures at the very outset, the UK should be much better able to turn the fruits of government supported R&I initiatives into new businesses for the UK.

3. How can the AIRTO community help?

3.1 The mission of AIRTO members is to provide the practical experience of innovation and the help needed to navigate the many specialist topics encountered on the journey from concept to fully commercial delivery including (for example):

- Technology assessment and proving
- Sourcing specialist scientific and diagnostic advice
- Field trialling in end-user environments
- Risk management and mitigation
- Regulatory and standards compliance
- Independent performance evaluation and certification
- and training in these and other aspects of technology and innovation management

3.2 These facets of innovation need to be addressed in any commercialisation plan. Taking into account the reach of all AIRTO member organisations - across not only the Catapults, but beyond into other Research & Technology Organisations (RTOs) and Public Sector Research Establishments (PSREs) - the AIRTO community can help to underpin confidence in propositions coming forward to investors from the ISCF and other parts of the research base, as well as from the many propositions that emanate directly from industry.

4. What else could Government do to help?

4.1 Investors always look for paying customers to lend credibility to what is being offered as a new product or service. The US Government therefore acts as an early adopting customer for developments and does this extensively across its procurement programmes (notably in defence and space).

4.2 Whilst the government may guarantee to procure a service if successful, this encourages private investors to take on the development risk and to invest more in research and development (R&D).

4.3 If the UK could adopt similar behaviour it would almost certainly increase investor appetite for R&D and help to push the UK's R&D spend towards the 2.4% and then 3% of GDP targets. An anchor tenant role for innovative services (involving such things as geospatial information for example as currently being looked at in government could be tremendously powerful in pulling through innovation, improving productivity and creating export opportunities). Anchor tenancy roles where the private sector takes on the development risk and its financing can be found in other countries – including France for example.

4.4 If sources of patient capital are deployed to support nascent innovation companies to address the concerns that are the subject of this consultation, it is important that there should be stability in the mix of solutions offered. AIRTO understands that the City currently has an appetite for patient capital, partly

- because metrics around the misallocation of capital in the UK are reaching high levels. As such, new investment vehicles are being explored, including those designed around patient capital. However, it would not be helpful to the innovation sector if the new patient capital products were suddenly to be withdrawn in the future, for example if the misallocation metrics were to change.
- 4.5 SBRI is another scheme that could be utilised here to great effect, encouraging a customer/client relationship between government and small companies rather than grant dependency and helping SMEs to leverage-in further private sector risk finance.
 - 4.6 Finally, in order to move away from the linear model narrative of commercialisation it might be useful to avoid the concept that science and the university research base drives innovation and productivity. It is ambitious entrepreneurs who spot opportunities in the marketplace who drive innovation and embed it in the economy. The science however opens up opportunities to apply new technologies in service of these entrepreneurs, who will then themselves drive innovation and productivity. The importance here is that taking spin-out opportunities direct from universities is in many instances seen by investors as the highest risk and most costly route to market and it may be that an alternative industry and market driven narrative would be preferable?

About AIRTO

AIRTO is the Association of Innovation, Research and Technology Organisations. Its membership comprises approximately sixty of the principal organisations operating in the UK's Innovation, Research and Technology (IRT) sector. The IRT sector has a combined turnover of £6.9Bn, employing over 57,000 scientific and technical staff (equivalent to the academic staffing of the Russell Group of universities) and, for comparison, it is significantly larger than the network of Fraunhofer Institutes in Germany both in size and its scope of activities. The sector contributes £34Bn to UK GDP. AIRTO's members work at the interface between academia and industry, for both private and public sector clients.

Members include independent Research and Technology Organisations, Catapult Centres, Public Sector Research Establishments, National Laboratories, some university Technology Transfer Offices and some privately held innovation companies.

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