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All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

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University Investment Funds

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A number of research universities in the UK, and no doubt elsewhere, are considering setting up medium sized investment funds (~ £50m) to support and enhance their technology transfer activities, specifically the formation of successful spin-out companies.

This is a natural progression for universities in the development of technology transfer activities, and like most things in life there are advantages and disadvantages for those involved.

In my experience at Oxford University there has been a serious conversation about setting up a Fund about once a year, usually prompted by approaches from potential investors or potential fund managers; some of these conversations go on for many years. Oxford has not yet set up a Fund, but Cambridge University has, through the £50m Cambridge Innovation Capital Fund. A more recent example is Epidarex, a Fund involving a number of UK universities having close association with a Fund, one university (KCL) investing in the Fund itself. Imperial College in London has gone even further in some ways, as far as converting its technology transfer office into the venture capital firm, Imperial Innovations.

This article describes the advantages and disadvantages for those involved in setting up mid-sized investment funds (~ £50m) to invest in a university's spin-out companies. A number of perspectives are considered: from the university, the investors into the Fund, the Fund managers, and the investee companies receiving money from the Fund.

In summary, from the university perspective, the issue comes down to weighing the disadvantages of a tied fund with the benefits from access to capital and being seen as active in the area. The main 'winners' are the people who manage the fund, who use their experience and sales ability to benefit from a great opportunity to earn themselves money.

University funds in context

The typical Fund under discussion in this article is a mid-sized fund of approximately £50m structured along what many consider the typical venture capital model. The investors of the Fund are 'limited partners' investing in a 'general partnership' run by a group of fund manager investment professionals. The Fund intends to return money to the LPs within 10 years; the fund managers spend the first few years making investments, the next few nurturing the investee companies, and the last few exiting their investments. The Fund manager is paid a management fee of 2% to 3% of the funds under management, and 20% of the profits of the fund, referred to as the 'carried interest' in the success of the fund. The other 80% is returned to the LP investors. There are variations on this model with longer term investment horizons (generally a good thing) and corporate structures in which the funds for investment are held on the balance sheet of a limited company.

For a university, participating in a Fund will involve committing to allow the Fund to invest in its opportunities; this can be expressed as selling its deal flow, and we know investors are

always in search of deal flow. In return the university will probably receive commitments that investments will be made into its spin-out companies, and possibly a share of the profits. The extent of commitment made by the university is a crucial issue. The fund managers will insist on investment rights in order to raise the investment from investors; the investors will insist on the same if they see the opportunity to do so; the university is in a very uncomfortable position. This is the most challenging aspect for the university; can it make these commitments (what about views and existing obligations to research funders), and even if so, can it deliver on its commitments? How does it put a value on its deal flow? How for example would a university plan to discipline an academic who first offered an opportunity to another investor ...?

This section discusses some related issues for such Funds; the following section will set out the advantages and disadvantages of a Fund, from four different perspectives: the university, the fund managers, the investors, and the companies.

Proof-of-concept fund and Seed funds

Many universities already have a proof-of-concept fund and seed fund of one sort or another. In Oxford, Isis manages the £4m Oxford University Challenge Seed Fund and the £2m Oxford Invention Fund. Such funds are different to the investment Funds discussed in this article. Proof-of-concept and seed funds are often made up from grants from government agencies, or donations from foundations, charities and wealthy individuals. This is 'soft money', from those looking to support the technology transfer activity as a worthwhile activity itself; and sometimes also seek returns to make money for re-investment into the fund, so that it becomes an 'evergreen' fund. A leading example in the US is the Deshpande Centre for Technological Innovation at MIT, which provides education and mentoring support, as well as funding to develop technologies closer to market.

These funds typically provide money in three areas: first, back in the university research laboratory to develop prototypes, do more experiments to show the potential of the idea, provide more data to support a patent application; second, to purchase services in the fields of market research, competitor analysis and purchase the time of individuals who may be part of a new spin-out company; and third, as equity investment into the first round funding of a new spin-out. The objectives of the funds range from aiming to make financial returns (often to become self-sustaining 'evergreen' funds) to pure philanthropy.

Venture Philanthropy

The investment Funds discussed in this article are not venture philanthropy funds. Venture philanthropy funds aim to combine financial and social returns. In some structures the model is a financial return to investors limited to x% with returns above x% being donated to charities (including a university). In others the concept is to use investment methodology and management disciplines to generate greater benefits from philanthropic donations.

Endowment Management

Universities with capital endowments manage the investment of their capital in a variety of ways, often investing in funds of one sort or another. This is not the subject of this article at

all, other than the point addressed below that a university may well be an investor in a Fund, and this investment may be from the university’s endowment management arm.

Fund objectives

Establishing clear objectives for the Fund is essential. If there are external investors involved, then the objectives are likely to be very clear – to make high returns from a high risk investment. The objectives for the University are likely to be less clear, possibly an unknown mixture of making money and supporting technology commercialisation. Such a lack of clarity is a problem for the university.

Advantages and disadvantages for those involved

The table presents the advantages and disadvantages of a Fund, from four different perspectives.

	<i>Advantages</i>	<i>Disadvantages</i>
<p>The University including the university’s Technology Transfer office</p>	<ul style="list-style-type: none"> • More ready access to investment finance in its spin-outs • A share of the carried interest in the returns from the Fund • Profile and PR benefits in being seen to be active in this area • Fund attracts other investors to co-invest 	<ul style="list-style-type: none"> • If the tied Fund turns down an investment, others are unlikely to invest • If the tied Fund says yes, it is difficult to get a good price • Conflicts of interest if University has part of the carried interest • opportunities are pushed down a spin out route to feed the pipeline even if not the optimum route to commercialisation • Transfer of control of some technology transfer activities from the University to the Fund • The Fund Managers may not succeed; they and investors will blame the university
<p>Fund Managers the people who manage the Fund</p>	<ul style="list-style-type: none"> • Live off the Management Fee, irrespective of performance • Substantial upside from carried interest if successful performance 	<ul style="list-style-type: none"> • Find it difficult to manage another fund if unsuccessful
<p>Investors in the Fund</p>	<ul style="list-style-type: none"> • Potential high investment returns 	<ul style="list-style-type: none"> • Deal flow from one institution unlikely to be

	<ul style="list-style-type: none"> • Opportunity for follow-on investments 	<p>sufficient</p> <ul style="list-style-type: none"> • Potential loss; fund may not make decent returns. • The usual risk of investing in the fund management team; can this sized fund attract good-enough managers?
<p>Companies the investee companies who receive investment from the Fund</p>	<ul style="list-style-type: none"> • If the Fund invests, they have cash and a supportive investor 	<ul style="list-style-type: none"> • Are they getting a good deal • If the Fund says no, the company has to explain this to all other investors

Universities

The decision for a university to participate in a Fund is not straightforward. There are benefits, and there are risks. The risks arise from the investment community knowing there is a tied-fund, and the university dramatically limiting its options for a period of time.

Fund managers

These are individuals risking their careers on managing a university fund; fortunately for them, the conventional reward structures of the management fee mean the actual risk is negligible. The challenge comes from attracting fund managers of sufficient quality that everyone comes out smiling.

The quality of the Fund managers for small and medium sized funds is of paramount importance. Running a larger Fund requires financial engineering skills (leverage, MBO, MBI, M&A) that are not as important for success in a small to medium Fund. In the Funds being considered here, technology Fund managers must have skills in selecting and then nurturing the opportunities to avoid failed investments. A helpful quotation from Nassim Taleb – Antifragile 2012: “because all surviving technologies have some obvious benefits, we are led to believe that all technologies offering obvious benefits will survive”. They do not.

Investors

Investing in early stage technology companies is a high risk investment; investors should be experienced, and only allocate a small proportion of their portfolios to this asset class. It is always worth remembering that, as financial services advisors could say, the value of investments can go up as well as down.

Companies

Technology companies need capital to grow. They also need high quality advice and supportive shareholders. It is often a major challenge in early stage technology companies to align the specific interests of Fund managers with other shareholders and management in building long-term substantial sustainable business growth.

Conclusions

More universities are considering an involvement in mid-sized venture capital investment funds to support their technology transfer activities. This typically involves selling their 'deal flow' to a Fund in return for a share of the carried interest or simply to support the existence of the Fund. There are substantial disadvantages to having such a 'tied-fund', and the university needs to be clear it can absorb these. The university will be asked to make commitments which it has the confidence to deliver. One clear beneficiary of the Fund is the fund management team. If a university wants VC returns, it can invest in a proven fund manager and why then limit deal flow to one institution (even if it is your own)?

I am grateful to a number of Isis colleagues for their comments and suggestions on this paper.