S7.2 Venture Capital

"The Early Stage Venture Capital Process in Ireland, 2000-2010."

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Abstract.
One of the components of a National Innovation System is the availability of capital to entrepreneurs. In Ireland, this unmet need in the knowledge based small and medium enterprise (KBSME) sector was seriously exposed by the success of Iona Technologies. This TCD spin-out was nurtured with US funding, and then Enterprise Ireland funding, to an IPO on NASDAQ in 1997. Until then, the university sector was not seen by most of the Irish financial community, or by state agencies, as a realistic potential nursery of new high-tech companies. But Enterprise Ireland (a state agency) and its predecessor agencies had funded a series of programmes in Advanced Technology (PATs), expecting spin-offs, and afterwards, with help from the European Union, it became possible for us to study the requirements of entrepreneurs needing finance, in a succession of EU Innovation Programmes. At the same time Enterprise Ireland had embarked upon strategic programmes to co-invest with new venture funds, using state money to seed the establishment of such funds. With the use of money from the European Union's PAXIS programme, Taylor collaborated with the TCD team, and interviewed twenty three of the principal actors in Dublin, and established the first clear picture of how seed and venture capital was invested in 2003. From the interviews it was possible to establish a clear process of engagement, selection, and investment by venture capital firms. In 2010, Voigt repeated this exercise with as many of the same firms as possible using Taylor's template. There has been one significant change in the process: the final decision on investment seems to be more often negative after due diligence.

The description given here attempts to clarify the venture capital process as it actually occurs in the field in Ireland, as opposed to general texts on the Venture Capital Process internationally, of which there are many North American (*Lerner*), British (*Pearce and Barnes*), and Irish (*Mulcahy, Berkery*), examples. The approaches to providers of early stage finance have a one in fifty chance of gaining funds. Validation of the process described here has been confirmed by its adoption by one venture firm (a VC) in using their own long term record of investment to illustrate the process. The other important finding is that the majority of those interviewed specified what was absent from the training of graduate entrepreneurs, ranked their preferences for the various qualities sought in entrepreneurs and their projects, and believed initially that training to overcome deficiencies in critical areas would be important in improving the deal flow of new investible projects. This belief has modified somewhat over the past eight years.

Introduction.

For a small country like Ireland (with one seventieth the population of the USA), off-shore from an off-shore island, Great Britain, which lies off the coast of Continental Europe, the immediate larger attraction of diversification of one's capital investment to other countries is apparent. Even the Irish pension fund managers are regularly counselled to invest large proportions of their funds internationally to reduce the risks of investing in a small economy: ~80% of their funds are invested abroad.

Investment in new ideas then tends to arise through very personal contacts, and internationally it is known that angel investment by individuals or networks is probably a much larger industry than venture capital: but few private investors can possibly avail of the range of technical and industrial business advice essential to understand the potential markets of most new knowledge-based ideas.
The acquisition and maintenance of the competence experience and field craft of fund management requires long term and sustained effort and incentives: average returns improve continuously up to the eleventh successive cycle of funds raised, (*Lerner*). In Ireland, the notion of scale, of clustering of like-minded and supportive individuals, and of experienced entrepreneurs, are not well-developed, given the historic and continuing propensity of those with spare funds to send money to London, or other international centres. In this respect Ireland may resemble those less favoured states of the USA, states from where entrepreneurs are likely to move to California or to the East Coast to find money and other supports for their entrepreneurial projects.

State of the Art

Evolution of the high-tech economy in Ireland.

Although the mantra of those who study such matters, -that there is always a surplus of capital chasing really good ideas for investment,- gives us one expectation, experience on the ground in Ireland of getting money for interesting new ideas was rather thin: among the projects that had to find foreign capital were many of the tech-based start-ups of the 80s and 90s. Many were undercapitalised, and the record of success was poor. But two factors were becoming increasingly favourable for the prospects of such KBSMEs: the growing managerial experience locally in the plants of major multinationals would provide a new cohort with a combination of technical and business experience: in Biotech, Materials, and ICT, firms such as Merck, Pfizer, IBM, Microsoft, Hewlett-Packard, Apple, Dell etc, all ran substantial plants in Ireland, in which Irish managers were to receive international trading experience. When such plants closed, government made resources available to such managers to create their own companies. Secondly, the government had decided in 1998 that substantial investment in scientific research would be necessary to embed the multinational's interest in staying in Ireland, and in creating a pool of highly trained technologists among who might be found some entrepreneurial leaders who could instigate new indigenous ventures capable of addressing world markets. Neither of these decisions came readily to government: similar propositions had been decisively rejected by previous governments, despite the urgings of many external advisors. But eventually the message was accepted. The advice of Professor *Kenneth Arrow* may be cited to the effect that while Ireland might not expect to be in the forefront of scientific research, it would still require a cohort of trained specialists at the highest level of research, if new ideas were to be applied in Irish industry, irrespective of their likely foreign origin. Even in the United Kingdom itself, a world leader in Science, the Department of Trade and Industry had reckoned that 90% of the technology needed for British industry would come from abroad.

In retrospect, it is clear that although the Irish state itself was in the process of disengaging from state ownership of many sectors of industry, (fertilisers, steel, telecommunications, oil refining, specialised state-owned banks for agriculture and industrial development and failing industries), there was little prospect of a venture capital industry forming, possibly for the historical reason of export of capital from a high taxation regime. In any event, although there were specialised funds for new industrial projects created by the banks at the urging of government, these funds were rarely if ever applied to innovative or highly technical ideas for which markets were not evident. The trend had been that those managing new venture funds who invested at the start of their careers in relatively risky projects moved rather rapidly into what they saw as the safer ground of later stage investment, and growth of existing successful companies. Raising seed or venture capital was difficult, erratic and relied on personal contact. The process was unclear to entrepreneurs, to incubator managers, and to policymakers. Traditional bankers mistrusted, correctly, their own ability to choose from among the offerings of “techies” those projects that could stand a chance. Of

the three major banks, each took the opportunity to inform the entrepreneurship promoters of their stances in relation to new knowledge-driven ventures seeking money: “we would never invest in that kind of company”, “we wrote off immediately our last investment in a new company formation fund”, and “we would never invest in the kind of company you describe”. It would be misleading and untrue to state that there was no successful venture investing. In the 1980s NADCORP (a state owned fund) invested in a small engineering company Mincon, who produce drilling equipment in the west of Ireland: it became the firm that made the tool which speedily drilled the escape shaft for the trapped miners in Chile in 2010.
But the scale of such interventions was minute in relation to the need, and made little impression on the problem of how people in Ireland were to earn their living in the future. The Culliton Report of the 1990s was the official government policy on this future: Of more than a dozen subjects which received special analysis, each in a separate report, the subjects of innovation, entrepreneurship, and the creation of new industry from new technological discovery and scientific advances were not featured. Further discussion of the role of science and innovation in Ireland in 1996 is given in *Hardiman and O’Neill*. However scepticism about investing in innovation in Europe may have been well-founded, as *Lerner* (P.286) reports that venture capital in Europe lost money between 2001 and 2006.

It was in this environment that the present study commenced. Our approach was initially to talk to all the venture capitalists from abroad who came to our University (TCD) to see if there were any analogues of Iona Technologies in which they could invest. From these discussions, it was clear that the general level of understanding of the venture capital (VC) industry by our entrepreneurs, and by most of those of us mentoring and managing the incubation of KBSMEs was slight. In a series of programmes funded by the European Union's Innovation directorate, we began to rectify the deficiencies in our understanding, with the aim of improving perspectives of entrepreneurs in their task of seeking venture capital. Fortunately both the European Union’s programmes, and the work of private foundations such as the *Fondazione Rosselli* of Turin provided opportunities to discuss the problems and opportunities arising in the provision of high risk capital seeking high rewards.
In our first project entitled KNIFE we assembled a mass of information about the processes of venture capital in other countries, and started to distil this into simple lessons for entrepreneurs.
An important lesson that emerged from this exercise was an observation from a survey in the USA by *Hill and Power*. They reported that over 20% of those pitching to VC forgot to explain what the business would be. This matched accurately our own observations in the universities in Ireland, where the overwhelming urge of the academically-based discoverer/inventor had been to use up the time of any presentation emphasising the technical quality of the new business idea. This was famously exposed by a guru visiting Dublin, a serial entrepreneur from the East Coast, who said to the aspiring entrepreneur pitching to him, “-Son you have been talking for two minutes and I don't yet know what your business is going to be. In the USA you would be dead”. This extreme judgement, while salutary, proved to be an incorrect prediction in the particular case.

Methodology

Preparatory Investigation.

In addition to the literature studied, (both analytical and anecdotal), as part of the PANEL work for *PAXIS*, (EU-funded programmes), the opportunity to discuss early stage funding arose through local contacts with five early stage providers in Dublin, (including Growcorp, 4th Level Ventures, the Dublin Seed Capital Fund, and Seroba). Each provided presentations setting out the desirable characteristics of an approach by entrepreneurs, from the potential funders’ perspective. Among the principal conclusions of these discussions were:

- Stimulation by Enterprise Ireland from European Union Structural Funds, was evident from their subsidising investments by banks, and the formation of a venture capital association, the IVCA
- A new initiative to involve the DBIC(managers of a large incubator) as managers of the

Dublin Seed Capital fund represented a change of policy with respect to mentors and intermediaries

- The perception by entrepreneurs that it was hard to get money for "good" projects remained embedded in the culture of the city and the universities.

In the light of these continuing contradictions, despite the new policies changing availability, or offer of capital, we set out to investigate the process as it operated locally and internationally.
The consultations had provided useful information, particularly as they allowed for engagement and discussion in closed seminars as to what was meant by the generalisations in the written material. In addition we participated in seminars on Finance and New Knowledge in Milan (Fondazione Rosselli) in 2001, and 2003, and in similar PAXIS events in Barcelona, Stuttgart, Munich, Padua and Dublin. These events provided an understanding of the background in which it was beginning to be appreciated widely that the incentives that drive venture capital were not well understood by increasingly frustrated entrepreneurs. Further, entrepreneurs were often fearful of the reputation of venture capitalists, as wishing to manage and dominate the companies.

These contemporaneous events also indicated the growing interest of regional and national governments in Europe in disseminating knowledge about "new" financing mechanisms for commercialisation of discoveries in these countries' laboratories. Particular interest was shown in these seminars in the case studies of Israel during the 1990s (*Rabi*). Presentations at these seminars revealed to us similar processes, similar pathologies of emotional response to rejection by investors, and similar attitudes to venture capital. There was general agreement on the weakness of University led projects in their approach to obtaining venture capital: some curative educational programmes were well- described, but not widely deployed in most cities. Poor relationships between Universities and Providers of Finance in Europe were reported: in our case this was interpretable as the financial community having many approaches by university personnel to providers of finance to endeavour to secure money to continue research, rather than to build businesses. There was little analytic criticism of providers of capital, but much discontent was expressed. A core problem was that entrepreneurs became discouraged after three or four refusals, and commonly believed that the returns sought by the funders were unfair. Development of seed and early stage finance was thought to await the emergence of more business development services in Europe generally, if it was to be (more) effective. Entrepreneurs had become fearful of the reputation of venture capitalists, sometimes with the encouragement of mentors. A conclusion of the PAXIS Report was that "Local governments have usually not been capable of developing the means to catch the interest of private investors in financing new companies in their early stages". Some of the themes the Dublin team at TCD decided to adopt were: Improving the deal flow, How to communicate with investors, and Achieving clarity and feedback in the new technology-based start-up. But a first step would have to be finding out more about the actual deal flow process.

The Research.

The core research reported here was conducted by one of the authors, Taylor** in the summer of 2003, in TCD, as part of the PANEL projects funded by the European Union's PAXIS programme.
A number of VC suppliers in Dublin, and some mentors and entrepreneurs were approached and requested to fill out a survey regarding how they operated, and what were the sequence of stages in the typical engagement between investor and entrepreneur. In addition, the survey asked a number of questions designed to probe the defects that the VCs observed in the approaches made to them by entrepreneurs. A third strand was to ask some leading questions about how the VCs would view training programmes that sought to educate aspiring entrepreneurs in what they should know about the VC's needs. It asked them to indicate their preferences in regard to the structure of projects, teams and sectors. Industry stakeholders, (44 of them) were contacted for the study, and 24 individuals were interviewed, of whom 54% were investors, 29% facilitators, and 17% entrepreneurs.

The Role of Government.

In approaching the question of VC, it is necessary to refer to the involvement of the Irish State in the encouragement of industry: in the years since 1995, Enterprise Ireland has been the state agency which provides a number of aids to entrepreneurs, and to growing companies, within the state aid rules that govern competition in the European Union. There were three funds in Ireland in 1995 which could be considered as classic VC funds (in the US sense). By 2007 there were 19 such funds which were members of the IVCA (Irish Venture Capital Association), an industry association that represented these funds, chiefly to the government. Enterprise Ireland is a state-wide agency, with international offices in more than 20 locations, and with a large staff concerned with the development of indigenous industry within Ireland and exporting from Ireland. Most of these new VC companies had funds which contained priming investments from Enterprise Ireland. The then major Irish banks were well-represented. In addition, Enterprise Ireland disposes of funds that it can directly co-invest with the "private sector" funds. It follows that there are several stages of interaction between Enterprise Ireland and the aspiring entrepreneur, particularly those from the University sector.

Additional incentives to smaller new start-ups are provided by regional bodies, County Enterprise Boards, which provide loans and grants to smaller companies: once a company's prospects of selling abroad are clear, they may qualify for later supports from Enterprise Ireland. There are in addition several BICs, or Business innovation Centres in Ireland, as part of a Brussels-originated, but highly devolved network, that organises Business Angels, acts for early stage seed funds, runs incubators, and encourages entrepreneurs with mentoring, training programmes, and business planning and execution advice. Each of these agencies works on specific projects with the local universities or institutes of technology.

One may briefly trace the supports from Enterprise Ireland as follows. At the conclusion of a research programme in a Third-level College, those lead investigators who have received state funds from one of the agencies for scientific engineering or medical research, are obliged to declare their discoveries to the Tech Transfer office of their institution. In the early years after 2000, it became the practise for PI's to comply with these requirements. In return, Enterprise Ireland provided substantial funding for the patenting process, a development that resulted in a great increase in patent disclosures in the principal universities. For further applied research work to prove out the concept, funding of up to €400,000 could be secured on a phased basis from Enterprise Ireland. Some of this money was allocated to market analysis, and additional funds were made available to the technology transfer offices for the salaries of case officers to assist the entrepreneurs to prepare a business case for investment. In addition, in 2003, as a result of the improving political rapprochement between Britain and Ireland over the question of Northern Ireland, a new substantial Business Planning Competition run by InterTrade Ireland provided an incentive for entrepreneurs to improve the formulation of their planning, and to test their ideas before experienced juries of business people. The competitions were originally targeted on broadly based emerging companies, but in recent years a clear emphasis on Knowledge-based and Innovative companies has emerged.

The position in relation to venture capital had shifted radically over the years, if measured by the inputs of both state resources, and of private capital. By the year 2007, there were 19 VC firms operating in Dublin. To some extent the investment cycle in start-ups in Ireland is driven by the pattern of Enterprise Ireland's five year investment programmes, of which the latest commenced with fundraising by VCs in 2007.

In 2010, we repeated the survey process carried out by Taylor, interviewing many of the same firms in Dublin.

Findings.

The 2003 Survey.

As in most markets at that time, the Irish VC industry was still suffering from the aftermath of the dot.com bubble. The industry was raising capital for a third round of funds.

The questionnaire fashioned addressed the following areas: the General Environment in which the VC operated, the Deal Pipeline, the Staging of Investments, the identification of Critical Success Factors, Advice from VCs to First-time Entrepreneurs, and Entrepreneurship Education.

Taylor's inquiry showed that there was a gap in the market for Early Stage Funding. Typically a VC would not invest (or co-invest) below the €500k mark, while the ceiling for Business Angels and for Enterprise Ireland was €80,000, and €200,000 respectively, as depicted in Figure 1. Early Stage investing depended heavily on Enterprise Ireland, which was under pressure to increase the amounts being invested in a venture, while VC were Enterprise Ireland drawn down below the €1 m level but were investing small amounts at a late stage. About 80% of the investments being made were in companies led by first-time entrepreneurs.

The deal flow process in Dublin 2003 was quantified in the diagram of Figure 2. It is discussed below.

Basically, two-thirds of entrepreneurs contacting a fund gain a first meeting. Three out of five drop out after the first meeting, and again after a business exploration meeting. Two thirds of the remainer are cleared by the VC to have a pre-term sheet negotiation, and another one-third of these drop out before an offer. About half of those offered funds secure a transfer of funds, or two in every hundred initial contacts lead to a deal.

General Environment 2010.

Once again, Ireland's investment prospects were suffering from a decline in confidence, on this occasion caused as much by internal factors, as by the world-wide reverses on stock exchanges.

At this time, 2011, Ireland's debt per capita is comparable to that of the United States. But being small means that the debt burden causes more uncertainty.

The average VC fund had a size of €61 million, but ranged from €10 million to €150 million, ($14 million to $210 million). About one-half of the funds in the survey focussed on early stage investment, a little more than one-third invest in expansion stage companies, and one-sixth invest across the range of companies.

The Enterprise Ireland Programme had grown substantially during the decade: the funding available rose to €525 million ($725 million) for the period 2007-12. These funds had made 87 investments with a value of €52million ($73 million) by 2010.

The 2010 Inquiry.

This inquiry was carried out by Voigt, who had the advantage of Taylor's original data, and questions. He received answers from 13 funds of the 23 known funds in Ireland, 4 of which declined to participate, and 6 of which gave no response. The questionnaire based on the 2003 survey, was nearly identical but the questions on three topics, Environment, Staging, and Education were augmented. Because of the general state of the economy, it is not surprising that the initial response rate was low, although survey fatigue was probably also a factor. Only the publicly available information was available from the European and Irish Venture Capital Associations. Voigt used Student's t-test to look for significance in the answers to questions on the surveys from each end of the decade. Tables 1 and 2 show the imprtance attached to various factors, in the two surveys

Interpretation

Discussion of the results:

The picture of the general environment in which entrepreneurs sought funds in Ireland as revealed by the 2003 survey is shown in Figure 1. About 80% of all investments were made in companies led by first-time entrepreneurs. There existed a clear gap between the very early stage investors (angels and Enterprise Ireland, and the market which preferred not to invest below the €500,000 or $700,000 level.

The deal pipeline revealed by the survey shows the steps in the process between first contact and the transfer of funds to the new venture in 2003. Individual steps might differ greatly in time taken to pass the filters, but the overall result was that it took nine months to achieve an investment. One in 50 approaches resulted in an investment. By 2010, the same steps were evident and the numbers of projects that succeeded in gaining an investment were remarkably close to the 2003 figure. The data, on statistical analysis, gave the same result whether or not the Enterprise Ireland figures were included. Just over 3 investments were made for every 100 approaches to a VC. In 2003 the figure was 2.5 investments per 100 approaches. One may postulate that in the environment during 2009, when the entire economic future of the country was under some stress, there may have been a reluctance to commit funds, but this was balanced by the pressure to make some investments from the 2007 fundraising round. The obstacles to getting an investment rapidly after a few presentations, which is the typical expectation of a university-led spin-out, are evident from the figures. Although there are exceptions where well-worked up propositions pitched to sector-specific funds receive fairly immediate responses, there is still usually a delay of months while the"formalities" are elaborated. In cases where more rapid funding is apparently more easily secured, it seems from local experience, that the proposition's proponents have taken care to establish close connections all along the value chain where they hope to market their product.

These findings indicate that the rate of investment is about one in 50, for propositions brought to Irish VCs. Generally, the reports in the USA suggest that the corresponding success rate (from the entrepreneur's point of view) in the USA is less than one in 100. The survey in 2010 confirmed the figure: no significant differences in the success rates at each step were observed, except for due diligence when the fraction receiving term sheets after due diligence fell from four-fifths to just under half. Slight increases at other stages, insignificant in themselves, led to a small increase in the fraction actually securing money per 100 approaches made. The due diligence requirement may have become stricter at board level. But clearly there was more money available for investment by 2009/10 than had been the case in 2003.

Deal Pipeline in 2010

Excluding the case of Enterprise Ireland, approximately 100 contacts were made annually, on average to each of the venture funds, a potential deal flow that was almost exactly the same as in 2003. The deal flow in 2010 was remarkably similar to that noted in 2003, with one notable exception: of those who went to due diligence, fewer got investment.

An additional question asked in 2010 concerned the VCs' views on additional success factors over those noted by Taylor. These new factors, somewhat echoing of earlier noted issues, included in decreasing order, marketability, experience, knowledge, and scalability.

Staging Investments. About 70% of funds typically stage their investments using milestone achievement expectations.

Advice for first-time entrepreneurs: Most of the VCs were able to express strong views on the areas where they perceived weakness in the approaches made to them. Additional questions were added to the 2010 survey these shed some light on whether or not an improvement had been noted in the

approaches made by entreprenurs to the venture funds during the seven year interval beween the surveys..

The views of the Industry on critical success factors for entrepreneurs.
Table 1 shows the score out of five points (1 is not important, and 5 is critically important), given by those surveyed to the importance of various critical success factors for entrepreneurs in 2003 and 2010. The answers regarding *comprehensiveness*,
and *communications* scored these factors higher in 2010, while *confidence* was down rated, within statistical confidence limits.
Impromptu suggestions for improving first-time entrepreneurs performance were also catalogued and compared to identify higher frequency responses to various issues. More attention to basic business criteria and to choosing investors for appropriate sectors was advocated.
The two most important investment-critical success factors in 2003 were Credibility and Confidence.It was stated that entrepreneurs could earn credibility by building a strong team (38%), gaining appropriate experience (38%) and by acknowledging and addressing weaknesses (19%). Confidence was described as having a can-do attitude (54%), hiring confident team members (23%) and committing one's own money to the venture (23%).
For Communications, the advice was: to tailor the message to the audience (40%), to listen (33%), to go easy on technical jargon (27%), and to practice repeatedly and focus on key points.

Entrepreneurship Education.
The views of the industry on entrepreneurship education in Ireland were mixed, as shown in Table 2. Venture capitalists in 2011, in comparison to their views in 2003,

- believed that the understanding of the venture capital process by entrepreneurs had improved
- were clearly not as convinced as they had been, that an improved understanding of the Venture Capital process would accelerate the funding process,
- were less likely to believe that an improved understanding of the VC process could be reached through training or additional education,
- Were more likely to believe that universities should provide training and education in this area.

Policy implications

Murray has pointed out that governments are slow to recognise that the culture that engages venture capital investment takes generations to evolve. Despite having good connections with the United States, and the United Kingdom, Ireland has had a mixed and sluggish response over the years to new technologies and to new industries. Its response to the IT industry has been the exception, partly or mostly in those elements that did not require significant investment for innovation in software and applications. Visitors from the United States, over many decades from the 1970s, particularly from the major universities encouraged the indigenous professors and the state's civil servants to widen their horizons, to create industrial liaison offices, and to try to harness the presence of multinational plants with their experienced staff to generate a more entrepreneurial culture.

State and private enterprise support for university activity in innovation was negligible until the late 1990s. The ease with which people could emigrate, traditionally to more favourable locations in New York, Philadelphia, Boston, London and Cambridge, and latterly Berlin, delayed the local development of more dynamic companies. Venture Capital has been slow to develop until Enterprise Ireland built up its in-house expertise: it is now a significant player by European standards, with partnerships with many banks, and funds, a worldwide network of offices, (including one in Palo Alto), and the ability to lend its expertise in many areas of marketing and

sales and networks to meet the needs of small exporting companies. It has bridged many of the early stage financing gaps for typical knowledge-based entrepreneurs. The process by which money may be secured is fairly clear in general terms, provided that one accepts that the selection processes are well-informed. There is a catch 22 for many entrepreneurs in the system that operates at present: any business angel or early stage VC will expect two things of an entrepreneur: that Enterprise Ireland will have agreed to fund to a significant extent a project that is seeking investment. Secondly, it is clearly in the interest of the Venture Capitalist to pass much of the onus onto a state-funded agency to carry out the due diligence. But Enterprise Ireland could argue that it wants the Venture Capitalist to do the domain due diligence independently, and that it is for the private investors to take those risks and make those judgements. At some stage the state will wish to withdraw, at least from areas where sufficient pump priming should by now have occurred. The end of the present programme in 2012 will require difficult decisions from all the usual sources of funds for the venture capital firms themselves. Our broad purpose in attempting this work was:

- To bridge the understanding gap, so that entrepreneurs understood the needs and language of the funders and
- To collect the necessary information in order to train users in the process of acquiring venture capital for high tech projects.

The process description resulting from this work gives a fairly accurate picture of the process as it is in Ireland. It has been stable for the past seven years and is therefore a solid basis for informing those who will be approaching venture capital funds for investment. Confirmation was obtained in March 2011, a manager of NCB Ventures, a leading Dublin-based VC firm, who showed their process at a class in venture capital in TCD for masters-level students. The NCB process cycle for investment shown by Murphy, Figure 3, is based on Taylor's synthesis shown in this paper.

The advice collected from the venture capitalists, (of which a small fraction is summarised here) has been important for the entrepreneurship training process in the university context. Three elements recommended by the industry have been particularly implemented in the TCD programmes, although on very modest, if increasing, scales. They are the use of local entrepreneurs as advocates for better planning, and for taking well-known lessons on board, the use of specialists for communications training, including non-verbal communications, and encouragement to practise repeatedly. It is also important for entrepreneurs to see the financing of new ventures from the perspective of the funders: as in any market, the market for money needs to be investigated if one is to understand how it operates and why.

The future of any venture capital industry depends on successful exits during successive life cycles of its constituent funds. If a sufficient number of good exits are not obtained over the next few years, in Ireland, the return on capital invested in Venture Capital funds will be significantly disappointing. In that case, fewer or even no new funds will be established, and fewer entrepreneurs will get the opportunity in Ireland to try out their potentially great new ideas. Entrepreneurs will head for a nearby friendly cluster, strengthening its appeal for venture capital, so London, Boston and Silicon Valley will benefit more than Ireland from the start-ups that are created from an initial investment in research by the Irish taxpayer. Such an outcome will be very negative for the prospects of an innovation-based economy, and will strengthen the dependence on foreign direct investment, with its linkage to the present regime of low taxation on company profits in Ireland.

Further Research

A better understanding of the requirements of a venture capital fund, in choosing the investments it will make, should enable entrepreneurs to aim for the appropriate type of funding for their projects. Critically it should shorten the time spent by entrepreneurs sourcing funds and allow speedier

implementation of business plans. All factors which reduce the time spent to achieve milestones reduce the cost to the entrepreneur of the capital, or increases the appetitive of the funder. Present delays in securing finance are perceived to hinder the willingness or ability of entrepreneurs to start new ventures. However the process of getting to know the investor, and the need to build the relationship to secure respect, is perhaps longer in a European context than it is in the USA: this is an aspect that could be studied with profit in Europe.

The real prospects for accelerated growth in sales to match the high rate of return needed by venture capitalists may need more emphasis in the training, mentoring and advice given to those first-time entrepreneurs who choose the venture capital route to finance their start-up companies. The timing of provision of such information to entrepreneurs is crucial, for the abstract information has no meaning for the entrepreneur, until faced with a need for the large resource of money and network to execute a business plan. The actual needs of entrepreneurs for this information cannot await the resumption of the coursework each year in the academic cycle. Yet there is a significantly larger cohort of post-doctoral fellows, and students trained to PhD level and master's level, whose destination cannot for the most part be academic. To encourage more of these highly trained people to join in well-planned new ventures that will leverage their competence is a task facing government, industry and academia alike.

The degree of connectedness between various worthy policy initiatives, the influences of the presence of multinational industries, and the influences of the occasional continuity and frequent restructuring of state-funded programmes, and of government policies are open subjects for future research. Likewise, although they are not exclusive choices, it is fair to inquire at what point does the taxpayer expect to get proportionate returns for the investments in a local venture capital industry, as is obtained for the investments required to anchor inward foreign investment? It is not wise to pose this question of a fledgling initiative, but the end of the third or fourth cycle of pump priming may well be the right time to assess the value created. We know that the state in Israel withdrew and then returned again to support the venture capital industry,(*Rabi*) so there may be no answer that is correct for all states of the local and world economies.

Like most large problems, the answer to the problem of getting finance for knowledge-based entrepreneurs, will lie not in one particular initiative, or in strengthening one particular weak link in the chain. Despite the clear importance of imparting a better understanding of management process, planning, markets and sales to the technically proficient, too few entrepreneurs from university-level institutions experience any entreprenurially-oriented case-work or courses at the moment. The financing process will work more effectively than at present when the ecosystem and its main actors are agreed on the needs and act together to supply them through all the three channels, of the political, educational, and business sectors. In an open economy, like that of Ireland, where movement of people to other countries is a long tradition, the task is challenging. It will require even more coordination of effort, programmes, and incentives than is evident in the present practises of this local triple helix.

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Footnotes.

*Prof Taylor's experience prior to this work is relevant for four reasons. He had founded several companies in the USA. He was working on a PhD thesis in Stanford University on entrepreneurship. He had spent some years working with the entrepreneurship training programme at EPFL in Switzerland. He had no preconceptions about entrepreneurship in Ireland.

**Mr Voigt is an experienced specialist working in the IT industry in Dublin. His background in Continental Europe gave him a similar advantage in having no native preconceptions as to how the process would operate in Dublin.

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Figure One: The Early Stage Investment Offer in Dublin, 2003.

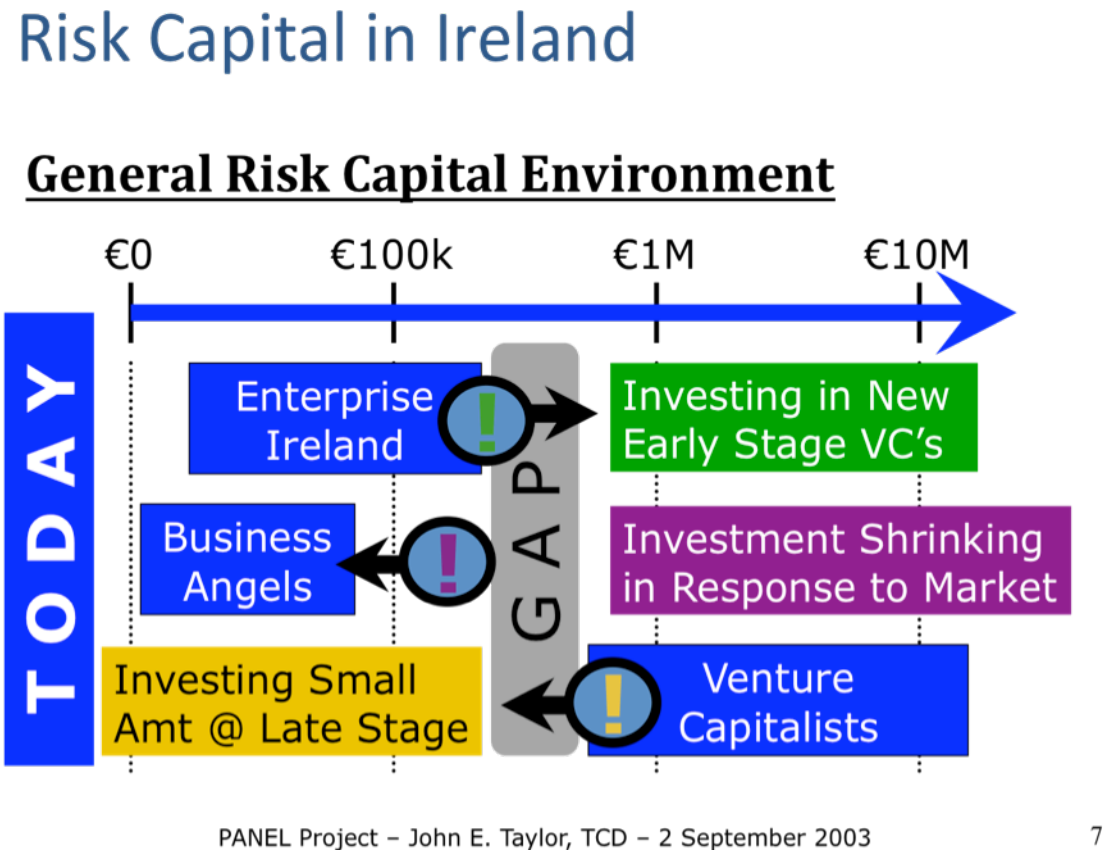
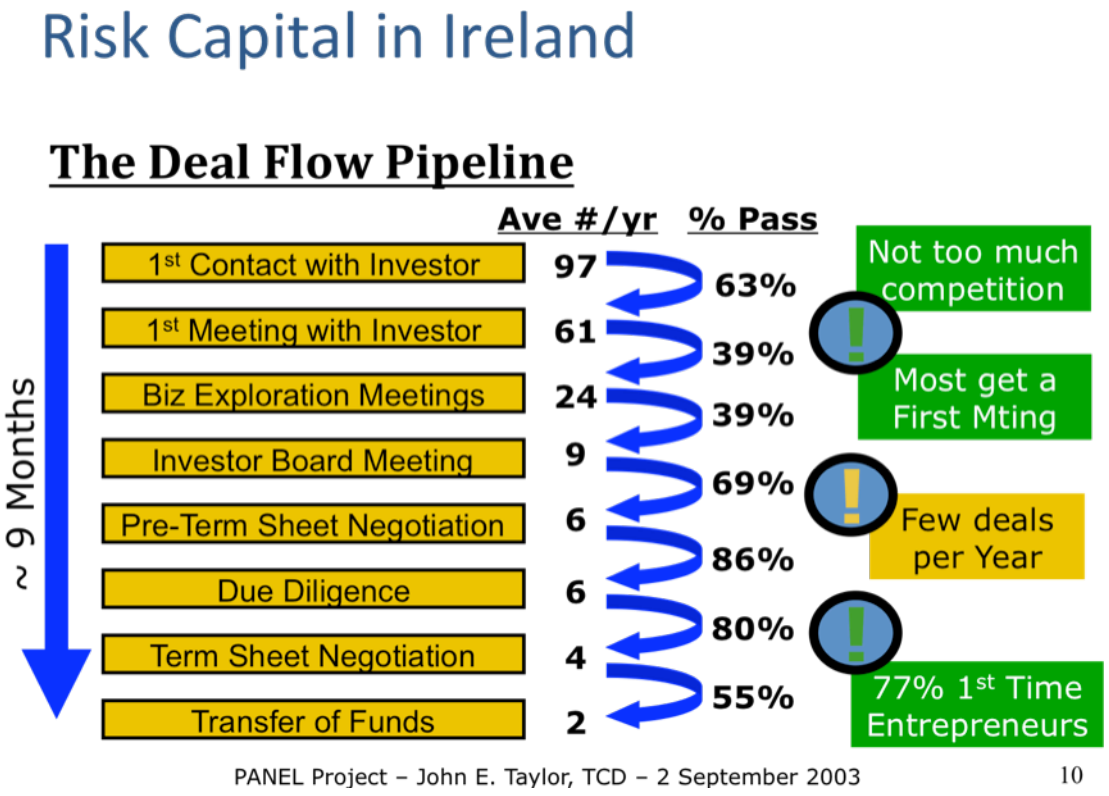


Figure Two: The Deal Flow Pipeline, Dublin 2003.



Tables 1 and 2

Table 1

Survey of Venture Capital Industry in Dublin
2003 and 2020

Views on critical Success Factors
1= not important, 5 = very important

Factors	Survey of 2003	Survey of 2010
Credibility	4.53	4.85
Comprehensiveness	3.58	4.46
Communication	3.78	4.42
Creativity	3.68	3.69
Comprehensiveness	4.34	3.38

Table 3.

Views on Entrepreneurship Education
% of answers as yes, no, maybe

	Year 2003			Year 2010		
	Yes	No	Maybe	Yes	No	Maybe
Do entrepreneurs lack Understanding of the VC Process	77.8	11.1	11.1	0	92.3	7.7
Would improved understanding accelerate fundraising Process?	83.3	11.1	5.6	61.5	30.8	7.7
Can education improve understanding of the funding process?	88.9	0	11.1	69	30.1	0
Should Universities provide training in this area?	84.2	10.53	5.26	92.31	0	7.7

Figure 3 The Deal Flow Record of NCB, Dublin 2011, with permission of M. Murphy.