

How can we strengthen links between entrepreneurial
companies and entrepreneurial universities in the UK?

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Executive summary

Abstract

Current policy thinking on innovation and the changing rôles of universities is introduced, along with discussion of entrepreneurial collaborations with business in California and Cambridge, UK. The Cambridge example is examined in more detail and some key factors behind its success are identified to serve as lessons for other UK initiatives in this field. Existing schemes and relationship structures are reviewed and the rationale expounded: advantages for both entrepreneurial companies and for entrepreneurial universities, along with possible areas of difficulty or conflict, are recognised and some opportunities for other initiatives to link the academic and commercial worlds are described.

Recommendations

To strengthen the links between entrepreneurial companies and entrepreneurial universities in the UK—

- Best practice from existing initiatives (Cambridge example) to be disseminated through the existing Science Enterprise Centres and other schemes
- Regional consortia of universities and business, and non-regional expertise consortia to be encouraged, making up for lack of resources or perceived prestige of individual institutions
- Better promotion of benefits of university collaboration to UK firms, especially SMEs engaged in research work
- Greater coherence and clarity of purpose of the numerous players and groups in the innovation networks
- Greater understanding and coherence of IP to be promoted within universities
- Universities to explore other forms of using IP entrepreneurially, including branded product development in collaboration with business.

Background to the issue

Universities as development engines

What is the purpose of the UK's universities? Should they be training the next generation with skills to generate and maintain the momentum of economic growth? Should they be dedicated to furthering academic knowledge in pure science, liberal arts, and personal fulfilment? Or should they be development engines for new technologies and tomorrow's economy, hives swarming with the best talent available to turn research into commercially applicable advances to benefit us all, socially and financially?

The third option is attractive, especially when presented in this way, and indeed, this idea of a 'third mission' for universities—which could contribute to the 'third stream' [e.g. 1] of funding after teaching and research council income—has been a popular one since the British Technology Group's right of first refusal on inventions arising from publicly funded research (a legacy of the National Research Development Corporation and National Enterprise Board) was rescinded in 1985 [2]. Richard Lambert's Review of Business-University Collaboration [9], published in December 2003, forms a foundation of much current thinking on the issues involved.

Hart [47] points out that "knowledge creation alone does not lead to entrepreneurship," and as Minshall and Wicksteed [3] have noted, there has been "a growing policy interest in innovation from the science base," leading to "a wide range of 'interaction' or 'collaboration' programmes that include both socially and commercially focused activities." As recently as this week (w/e 9. iv. 2005), Alec Broers' Reith Lecture for the BBC included the line, "'It is time we in Britain, so good at fundamental science, also came fully to appreciate the intellectual challenge behind product development,'" [19] which again reinforces the message that commercial applicability (and application) of university work is a common theme.

Silicon transplants?

How do these collaborative activities work? The most famous exponent of such links between industry and educational institutions is California's Silicon Valley, where Stanford University and Stanford Research Institute, together with forward-looking, highly entrepreneurial companies such as Hewlett-Packard (started by Stanford alumni), Xerox, Silicon Graphics and later Apple [4] established intricate networks and relationships, with the universities often undertaking research for companies, spinning out their own companies and indeed attracting supposedly unrelated companies to set up in the area, along with, for example, banks and venture capital firms to service the needs of the entrepreneurial community [5].

It is this model of a successful, interlinked community, blurring the boundaries of both the firm and the university, which has proved so attractive to entrepreneurs and policy-makers the world over—the establishment of technology clusters, either organically or through planned development, has become common. As Bob Metcalfe (co-inventor of Ethernet) has said, "Silicon Valley is the only place on Earth not trying to figure out how to become Silicon Valley" [6]. It is important to recognise that not all technology clusters involve university participation, but many of those which are focused on technical and scientific innovation rather than simply fabrication, assembly or coding have tended to involve educational or R & D institutions (even military research facilities in Israel, for example) to a significant extent [5].

Equally, whilst physical proximity creates the specific 'cluster' phenomenon, international collaborations between universities with a significant commercial focus—such as the Cambridge-MIT Institute [7]—show that geography need not necessarily be a barrier to entrepreneurial endeavours, although the Lambert Review notes that "informal networks cannot easily be sustained over long distances" [26], thus recognising the degree of formal organisation that may be needed for very large-scale collaborations to work successfully.

Lessons from a UK example

The question, then, is how best UK universities and innovative firms can work together to build the kind of entrepreneurial development community which has been elevated to a desirable status in policy terms by reports such as 1993's White Paper *Realising Our Potential* [8], the 2003 Lambert Review of Business-University Collaboration [9] and the DTI's 2003 Innovation Report *Competing in the Global Economy: the Innovation Challenge* [10].

The UK does not lack successful examples of entrepreneurial companies and entrepreneurial universities' working together to drive innovation, so it is worth examining how these collaborations have worked in order to determine how to apply the lessons more generally, and what policies can be considered based on what is learned.

The Cambridge cluster, or technopole, is the best-known UK example of multiple collaborations between business and academia, with the entrepreneurial network and community spirit having been (not surprisingly given the location) the focus of a number of studies—ranging from Segal Quince & Partners' original 1985 *The Cambridge Phenomenon* [11] to more recent analyses of the rôle of serial entrepreneurs [e.g. 12]. Herriot and Minshall, in the Autumn 2004 Cambridge Technopole Report [13], list three main ways in which the variety of organisations comprising the 'cluster' interact: community, collaboration and constructive chaos.

Community in this context implies that individuals self-identify with the phenomenon and recognise the part they can play in worthwhile and significant developments. In a university context, this may even come from a camaraderie-style loyalty along the lines of a sports team; it would seem to be particularly important where an institution either has a very good reputation already (e.g. Cambridge) or is trying to develop "perceived prestige" [3] in competition with rival institutions and it is in members' best interests to promote the status of the institution with which they are associated. Some anecdotal evidence of this comes from the lively discussions on online student forums, particularly in more creative fields [e.g. 14], where the reputation of one

institution in relation to others comprises a majority of the debate. Equally important, though, for a community meme to become prevalent is the belief that anyone has the chance to make a difference: there must be transparency of opportunity within the system.

Collaboration as used here means a recognition that the community effort is best sustained through networking, since the network effects bring benefits to both sides of any relationship. The presence of so many other entrepreneurs in the community, together with the academic expertise, means that collaboration will be the optimal way to grow a business or learn from others' experience. Collaboration in Cambridge comes from both out-and-out industrial research partnerships (e.g. the BP Institute for Multiphase Flow [15]) and through "the high level of engagement of the business community in enterprise education activities throughout Cambridge" [13]; this feature of the Cambridge cluster is possibly one of the most distinctive links between entrepreneurial companies and academia, with programmes such as the Centre for Entrepreneurial Learning's 'Enterprise Tuesday' events [16] being very widely attended and promoted.

Finally, the constructive chaos is perhaps not as flippant as it sounds; 'entrepreneurial thinking' as a state of mind would appear to depend to a large extent on having the freedom to find, explore and exploit opportunities without having to work in within a rigid societal architecture. The fact that "there is no one group that 'organises' Cambridge" [13] (and indeed, perhaps, the very complex relationships that make up the University itself) leads to the situation where there is both the freedom to build new enterprises, and also (without any real institutional 'safety net'), the excitement of risk which some studies have found to be a significant motivator in entrepreneurial thinking [e.g. 17].

Other UK clusters surrounding universities may derive in part from the pre-eminence of that university in particular fields; or indeed the university may have become pre-eminent in those fields because of their existing importance to industry in that area.

For example, Southampton's naval engineering importance led to the University offering courses in this field; yet the city's current status as a high technology and IT cluster was perhaps driven at least in part by start-ups and spin-outs related to the University's activities in these areas.

Options for strengthening the links

Existing initiatives

There are numerous existing schemes which have the specific aim of strengthening links between entrepreneurial companies and entrepreneurial universities, government-led and otherwise.

The network of Science Enterprise Centres, set up in 1999, “aim to embed a spirit of enterprise as a mindset for university departments and enterprise entrepreneurship as a discipline building on existing excellence in traditional activities” [18]. Run by the Office of Science & Technology (part of the DTI), there are currently 13 regional centres (e.g. Cambridge Enterprise) involving 60 higher education institutions, organising networking events, running—and arranging sponsorship of—business plan competitions, running courses on business and entrepreneurship and advising and supporting academics when dealing with industry or setting up spin-out companies. The regional structure means that each centre can specialise or tailor its programmes to suit local expertise; disciplines may cluster, especially if universities’ own science parks or new company incubators grow out of particular departments or faculties’ spin-offs.

Advantages of this kind of initiative include regional flexibility, as mentioned, and the ability to engage people from all walks of life: with the right publicity to raise awareness of events such as workshops or ‘HOWTO’ lectures, interested members of the public can become involved in the entrepreneurial community alongside students from a variety of disciplines.

Other initiatives also receiving government ‘third stream’ funding, but through different channels (such as the Higher Education Innovation Fund) include the London Technology Network (LTN), which “aims to put businesses in touch with the wealth of knowledge and resources at London universities,” [28] and a large variety of locally based innovation, business networks, chambers of commerce, Enterprise Hub Networks [e.g. 35] and consortia, some run by groups of universities, some by the Regional

Development Agencies, and some by local businesses themselves (i.e. completely without government funding). For example, London Innovation (funded by the London Development Agency [29]) works with business groups such as London First, Greater London Enterprise One London (which promotes social enterprise), innovators' groups such as Ideas21, LTN itself, and through LTN, may work directly with participating universities.

It is not an understatement to say that there is a multitude of groups involved in education-to-business and business-to-education community activities; whether this diversity deserves to be considered part of the 'constructive chaos' (q.v.), is perhaps debatable (the 'spirit of competition' distinction that Herriot and Minshall make [13] when talking about the chaos shouldn't be quite so applicable when organisations are intended to complement each other).

Nevertheless, regional consortia of universities, as have been common for seed funding applications (especially the University Challenge Fund, specifically intended for universities to commercialise technologies they have developed [30]) and cross-disciplinary research and commercial collaboration communities (e.g. PARK [31] and WestFocus [32]) in London and the Thames Valley, offer some opportunities for universities which, on their own may not have the necessary size or reputation, to attract business interest.

Different types of schemes for strengthening the links between entrepreneurial companies and entrepreneurial universities have also met with success, most notably the Knowledge Transfer Partnerships [33] (formerly Teaching Company Scheme), which make use of recent graduates in particular fields to bring new expertise mainly to SMEs—often enabling the companies to move into new product or service areas. Faraday Partnerships, which bring together university departments and leading businesses carrying out research by field, are another successful variant of collaboration—for example, 'Integration of New & Renewable Energy in Buildings' [34]. LINK [36]

provides government partial funding for collaborations between companies and research base organisations (which can include, for example, hospitals as well as universities).

Rationale behind the initiatives

For universities, advantages could come ultimately from revenues from successfully spun-out businesses and/or the licensing of technologies, although in the short-term, the benefits of increased student and staff participation and establishment of links with companies (which may provide placements, internships, 'live' projects or indeed research commissions) are probably sufficient motivation to become involved in collaborative activities.

Particularly in degrees with a strong vocational focus (e.g. engineering and product design), well-publicised links between universities and eminent or prestigious businesses in the field can be a major discriminator for students deciding where to study in the first place—a point which will become even more relevant with the advent of top-up fees.

For students already at university, the transition from studying into more career-oriented thinking can be greatly assisted by the involvement of possible employers in the curriculum, whether through placements or projects as already mentioned, or even through presentations on what it is like to work in a particular industry. "Among graduates, a lack of practical work experience and commercial understanding is frequently identified as a problem by employers," notes Lambert [27], and collaborative programmes can help to ameliorate this situation.

Indeed, in terms of specifically entrepreneurial companies giving presentations to students on exactly how they 'made it' (or how they didn't), this can in itself be highly inspirational in encouraging a spirit of entrepreneurship among the cohort.

What, though are the advantages for businesses? Many discussions of university-business collaboration do tend to take the universities' viewpoint; it is often portrayed as companies being able to teach students about business. For entrepreneurial

businesses that have been spun out of universities, or started by alumni, the chance to maintain links with the parent institution may offer access not only to expertise and a knowledge base that would simply be unavailable in the commercial sector, but access to familiar laboratories and workshops which would otherwise entail enormous capital expenditure for a new business.

Equally, for other businesses (perhaps larger companies) which become involved in university-business collaboration without any pre-existing links to the universities involved, aside from purely promotional considerations, there is the chance to circumvent expensive and perhaps ineffective recruitment consultancies by engaging directly with the next generation of 'talent'. Sometimes the use of unpaid or low-paid placements or internships can bring fresh ideas and competent work into a company at a much lower cost than would be the case with permanent staff; whilst this may be a cynical point of view, a wealth of anecdotal experience would indicate that this may not be an uncommon route for certain companies. Nevertheless, if the student can benefit from the exposure to real business, and the involvement with the commercial development of technology, it is a positive approach to take, especially if such placements are accredited by the university.

There is also the chance to refresh and update companies' own R & D capability with knowledge and expertise gleaned from working with "good university researchers [who] operate in international networks: they know where cutting-edge work in their field is going on around the world." [25]

Improving on existing initiatives

Problems are also apparent for both businesses and universities if the schemes are not managed in an appropriate way. Minshall and Wicksteed, referring specifically to spin-outs, note that "academics focusing time and effort on commercialisation activities may divert attention from their core activities of teaching and research" [20]; spin-out activity may also require specialist management. To some extent

this can also be applied more generally to universities' involvement in schemes such as the Science Enterprise Centres if they misjudge the amount of resources required.

The application of commercial, market disciplines to the academic employment mindset may also lead to conflict—for example, the recent strike ballot over 'unprecedented' enforced teaching redundancies at Brunel as the university attempts to move towards a commercially-focused research strategy [21].

Ideological conflict may also occur within universities where a habitually 'pure' academic ethos is regarded as superior to commercially focused or collaborative activities. Again quoting Bob Metcalfe: in a recent Cambridge-MIT Institute lecture, he recalled what a "low status" entrepreneurs and even business school staff were given by their more traditionally academic peers at Oxford and Cambridge as recently as the early 1990s [22].

Whilst this attitude has surely ebbed over the past decade, "with many universities casting off their ivory tower image" [24], it has also possibly evolved into a feeling that traditional, non-vocational disciplines are 'under attack' as universities place so much priority on their commercial activity. A related problem may be that only commercially attractive areas of applied research will be given precedence in allocating budgets, since absolutely pure science may not find a comfortable collaborative rôle within the Science Enterprise Centre community; this may erode the UK's reputation for pure science excellence.

For businesses, the Lambert Review particularly notes that "the biggest challenge... lies on the demand side" [23]; i.e., that UK companies do not realise or understand how to make the most of relationships with universities, and that outside certain sectors (aerospace/defence, and pharmaceuticals/biotechnology [24]), there is little R & D investment.

In the majority of cases, Lambert is referring to companies' not appreciating how useful it could be if they collaborate with universities in the first place, but there is also the issue of collaborative relationships that have been established ailing or failing due to misunderstandings or differing levels of commitment. "Business-university collaborations

need careful and consistent management by both sides... For their part, universities talk about the problems that can result from frequent changes in company strategies, or in the boardroom.” [26]

Conflicts can also occur where priorities over IP are concerned: once previously publicly-funded work becomes tied up with commercial considerations, it can make it difficult for academics to publish, and thus the goal of disseminating innovation can be stifled. Clearly defined IP structures from the outset can help to solve this, but there will inevitably be tensions.

A major difficulty is achieving a satisfactory objective measure for the success or otherwise of these initiatives. Whilst raw numbers of companies spun out from universities give a guide to the level of commercial activity, Gill, Minshall and Rigby [48] have shown—in reference to German knowledge transfer activities—that large numbers of spin-out companies may merely indicate premature release of projects into a commercial environment where they may find it difficult to survive. Again, then, success here is about making appropriate choices as part of a commercialisation strategy, and naïve pressure to spin out more companies than a rival university merely for the benefit of league tables should not be succumbed to.

Opportunities for other initiatives

Universities’ own commercialisation and technology transfer offices are, in themselves a way of forming links between business and academia, even if the collaborations formed are one-offs (such as outright sale of rights to an invention). There is potential, as more UK universities dedicate more resources to commercial activity, for this to become a major activity, integral to the university’s mission, much as it has become at MIT, with a very clearly defined IP policy [37]. A wider clarification and better understanding of IP issues could be a boon across the spectrum of university-business collaboration; “research collaborations might be made easier to agree if model contracts could be developed on a voluntary basis to cover the ownership and exploitation of

intellectual property" [1]. Innovation relay schemes, such as the international IRC Network [42] or Yet2 [43] could be significant here in allowing access to a wider set of issues—both for businesses needing solutions and universities looking for potential technology purchasers.

The introduction of top-up fees for undergraduate courses will surely—whether intentionally or not—drive many universities towards much more corporate-style marketing techniques, as the university 'brand' becomes ever more important. This has already happened with MBA advertising by many universities' business schools, and recent comments from university administrators such as Michael Beloff, president of Trinity College, Oxford, in favour of leading universities 'going private' [38] (perhaps along the pioneering lines of the University of Buckingham [39]) indicate some further tendency towards this kind of consideration.

As an extension of age-old reputation-based commercial operations—such as Oxford and Cambridge University Presses—university branded or endorsed products and services could become a significant way for universities to become more entrepreneurial, generate additional income and promote themselves as businesses. Whilst names and logos are already routinely licensed to companies to be printed on clothes and souvenirs, it would be an interesting extension of this idea if products employing technologies developed at the universities themselves were to be proudly 'branded' in this way. For example, Henry Kloss's Cambridge SoundWorks [40] may have been named after Cambridge, Massachusetts rather than after MIT or Harvard themselves (or indeed the UK's University of Cambridge), but the name has sufficient gravitas and a perception of excellence to give valuable perceptions of cutting-edge research to the buyer. Oxford Instruments, Cambridge Consultants, Cambridge Silicon Radio and others also play on these associations.

It would indeed be cynical if the extent of universities' entrepreneurial activity in this area were to licensing their names or endorsement to entrepreneurial businesses; however, if a scheme genuinely employing innovations developed by a university-business

collaboration could benefit from such branding then the exercise may be more worthwhile.

For example, the author has previously proposed an initiative [41] to Brunel University, London, whereby its technology transfer office would each year select a number of viable student product innovations from its School of Engineering & Design courses and seek, in partnership with relevant companies, to commercialise the products (which, being mainly from undergraduates, are innovative but well within the realms of what could be brought to market relatively quickly) under a brand such as 'Brunel Design,' with the aim of achieving a reputation similar to the Dyson name. Publicity and commercial recognition would go in hand with building links with businesses, revenues from investment in the venture, and an enormous boon for the students involved. This sort of scheme could surely have some merit.

Lambert [44, 45] suggests another initiative: utilising alumni and a database of academics with relevant qualifications to build closer relationships with companies, both through becoming non-executive directors and through engaging alumni already working for companies.

Parallel initiatives in encouraging innovation, especially R & D among SMEs, such as the SBIR-style programme proposed by David Connell of TTP Ventures [46] may also benefit university-business collaborations, since many SMEs will need a research partner; R & D tax credits can also be applied to this work.

Conclusion

The main recommended actions are outlined in the executive summary; the aim is to build on the best practice of existing schemes, avoiding some of the pitfalls whilst introducing some new ideas in addition. Overall, it is clear that the increasing commercial awareness of universities, and their responses in dealing with commercial considerations, are major factors; equally, encouraging businesses to make the most of possibilities offered by university collaboration is also a common theme as well as something of a challenge.

3,999 words exactly

References

- [1] LAMBERT, R. Lambert Review of Business-University Collaboration—Final Report, Her Majesty's Stationery Office, December 2003: page 4
- [2] 'The BTG Story – 50 years of shaping the future' on BTG plc website, http://www.btgplc.com/about/historical_overview.php
- [3] MINSHALL, T & WICKSTEED, W. University spin-out companies: Starting to fill the evidence gap, Gatsby Charitable Foundation, January 2005: 'UK context for university spin-outs 1998-2002'
- [4] JACOBSON, D. 'Founding Fathers,' Stanford Magazine, July/August 1998. Available at http://www.stanfordalumni.org/news/magazine/1998/julaug/articles/founding_fathers/founding_fathers.html
- [5] ROSENBERG, D. Cloning Silicon Valley, Reuters/Pearson Education, 2001 : 'Technology clusters: network architecture'
- [6] GROMOV, G. "A few quotes from Silicon Valley history," on NetValley.com <http://www.netvalley.com/svhistory.html>
- [7] About CMI, Cambridge-MIT Institute, November 2002. Available at <http://asp2.miuk.com/cmilive/documents/CMIABOUT.pdf>
- [8] 'Realising Our Potential,' on British Council website, <http://www.britishcouncil.org/gost/rop.htm>
- [9] LAMBERT, R, supra
- [10] Innovation Report: Competing in the global economy: the innovation challenge, Department for Trade & Industry, December 2003
- [11] The Cambridge Phenomenon: The Growth of High Technology Industry in a University Town, Segal Quince & Partners, 1985; updated version The Cambridge Phenomenon Revisited, Segal Quince Wicksteed, 2000.
- [12] MYINT, Y, VYAKARNAM, S & NEW, M. The Role of Serial Entrepreneurs in the Cambridge High-Technology Cluster: The Effect of Social Capital in New Venture Creation & the Cluster Growth Process, Centre for Entrepreneurial Learning, University of Cambridge, 2004
- [13] HERRIOT, W & MINSHALL, T. Cambridge Technopole: An overview of the UK's leading high-technology business cluster, St John's Innovation Centre, Cambridge, Autumn 2004
- [14] 'Students & schools,' on Core77 forums, <http://boards.core77.com/viewforum.php?f=1>
- [15] Cambridge University BP Institute for Multiphase Flow website, <http://www.bpi.cam.ac.uk/>
- [16] 'Enterprise Tuesday,' on Centre for Entrepreneurial Learning website, http://www.entrepreneurs.jims.cam.ac.uk/programmes/enterprise_tuesday/prog_enttues.htm
- [17] MCCLELLAND, D. *The Achieving Society*, Van Nostrand, Princeton, 1961. Available at <http://www.questia.com/PM.qst?a=o&d=10299666>

- [18] ROBERTS, C. "About UKSEC" on UK Science Enterprise Centres' website, 25 January 2005.
http://www.enterprise.ac.uk/about_us
- [19] 'Reith talks focus on technology,' on BBC News website, 6. iv. 2005,
<http://news.bbc.co.uk/1/hi/technology/4417269.stm>
- [20] MINSHALL & WICKSTEED, supra: 'Synthesis of findings'
- [21] FORD, L. 'Lecturers threaten legal action over Brunel redundancies,' Guardian, 17. iii. 2005.
Available at
<http://education.guardian.co.uk/universitiesincrisis/story/0,12028,1440271,00.html>
- [22] 'Azara Blog: Bob Metcalfe and Hermann Hauser,' on Cambridge 2000 website, 11. ii. 2005,
http://www.cambridge2000.com/azara_blog/html/2005/02/20050211_metcalfe_hauser.html
- [23] LAMBERT, R, supra: page 1
- [24] *ibid*, page 3
- [25] *ibid*, page 11
- [26] *ibid*, page 13
- [27] *ibid*, page 21
- [28] 'London Technology (LTN) Partners,' on London Technology Network website,
<http://www.ltnetwork.org/Partners.htm>
- [29] London Innovation website, <http://www.london-innovation.org.uk>
- [30] 'University Challenge,' on Office of Science & Technology website,
<http://www.ost.gov.uk/enterprise/knowledge/unichallenge.htm>
- [31] Partnership in Accessible Research & Knowledge website, <http://www.unipark.org.uk>
- [32] WestFocus website, <http://www.westfocus.org.uk>
- [33] Knowledge Transfer Partnerships website,
<http://www.ktponline.org.uk>
- [34] Faraday Partnership: INREB website,
<http://www.faradaypartnerships.org.uk/inreb.html>
- [35] Southampton Enterprise Hub website,
<http://www.southamptonhub.com>
- [36] LINK website, <http://www.ost.gov.uk/link>
- [37] Guide to the Ownership, Distribution and Commercial Development of MIT Technology, Massachusetts Institute of Technology, June 1999.
Available at
<http://www.mit.edu/afs/athena/org/t/tlo/www/guide.pdf>
- [38] Ward, L. 'Oxford could go private in 15 years, says head of Trinity College,' Guardian, 6. x. 2004.
Available at
<http://education.guardian.co.uk/universityaccess/story/0,10670,1320547,00.html>
- [39] University of Buckingham website,
<http://www.buckingham.ac.uk>

- [40] 'The history of Cambridge SoundWorks,' on Cambridge SoundWorks website, http://www.cambridgesoundworks.com/store/category.cgi?category=about_press_history
- [41] Author's proposal to Brunel University, April 2005
- [42] Innovation Relay Centre Gateway website, <http://irc.cordis.lu>
- [43] Yet2 website, <http://www.yet2.com>
- [44] LAMBERT, R, supra: page 31
- [45] *ibid*, page 32
- [46] Connell, D. Exploiting the UK's Science & Technology Base: How to fill the gaping hole in UK Government Policy, TTP Ventures, Melbourn, December 2004
- [47] HART, D. 'Entrepreneurship Policy: what it is and where it came from,' in *The Emergence of Entrepreneurship Policy*, Cambridge University Press, October 2003: page 13
- [48] GILL, D, MINSHALL, T & RIGBY, M. *Funding Technology—Germany : Better by design?*, Wardour Communications, London, June 2003