

Spin out doctors: Is the Cambridge phenomenon about to be revived: And if so, can the pitfalls of the last boom be avoided: Jim Kelly reports

Education

The Guardian

02 March 2004

There's something stirring in Silicon Fen. The hi-tech cluster around Cambridge University, in the doldrums since the dotcom bubble burst, can scent optimism again. There is serious talk, and even evidence, of a revival in the "Cambridge phenomenon" - arguably the best example outside the US of the power that can be unleashed by linking academia to the world of business.

Last week one of the city's hi-tech companies, Cambridge Silicon Radio, which has historical roots deep in the university, floated on the London Stock Exchange and saw shares trading well above the offer price of pounds 2 - initially at a thumping 242p. CSR, a developer of so-called "Bluetooth" systems that enable short-range radio communications between PCs, mobiles and other devices, is the first such company to go public in the area since late 2000. Phil O'Donovan, managing director of CSR, says he heads a global company with links to many universities in the UK, but admits he could not imagine relocating development activities out of Cambridge: "It is a great place to be because of the quality of the labour market and the network. The university is important, but it is just part of the mix."

CSR was born out of Cambridge Consultants in 1998, the quintessential university-inspired intellectual hothouse. It is based on the Cambridge Science Park and the offer price valued the company at pounds 240m - and this in a supposedly unfashionable IT stock, not the much trendier businesses that have more recently thrived in the area, prompting some to rename Silicon Fen "Biotech Basin". The CSR flotation is not the only green shoot. The investment company 3i has said it plans to put pounds 13.5m into local companies in the next few months.

Universities across the country, preparing their strategies for income generation in the harsh new world of top-up fees, will be watching Cambridge carefully. The Lambert report into the links between higher education and commerce has set an agenda for the next decade that will demand success on campuses across the UK, to mirror the US model. Survival for many will depend on generating so-called "third stream" income from commercialisation.

And if Cambridge was the great example in the 1990s of the potential of such link-ups, it was also the best example of how things could go wrong - from the failure to secure for the UK the full benefits of local discoveries to the chronic overheating of the local economy. So this time round, how will things be different in Silicon Fen? Will it provide the model of how things should be done, or be a stark warning of the pitfalls ahead?

First time round, despite the mistakes, the benefits were spectacular. The three decades of the boom saw Cambridge, as Lambert acknowledged, assert its intellectual leadership of the UK higher education system while the greater

Cambridge region created 5,000 jobs a year and GDP rose 6.3% per annum - compared with a UK national average of just 3.4%. It was a real boom, and a genuine success story.

But for some critics the revolution came despite the university, drawing on its intellectual resources but brushing aside the institution itself. The Lambert review specifically criticised Cambridge for not modernising its governance and failing to develop a "businesslike approach" in the way it dealt with industry. Cambridge's sometimes Byzantine governance system and its confused policy on intellectual property were seen as brakes on progress, while the wealthy, independent colleges were said to be stumbling blocks on the road to a US-style entrepreneurial dream.

This time can Cambridge do better? Professor Ian Leslie, one of the new breed of pro-vice-chancellors, is living proof that things can change. The creation of a stronger central executive, with a team that can spend time solving the big issues, was one of the reforms which managed to get through stormy internal debates last year, although other elements of the modernisation agenda floundered. Leslie insists crucial reforms were made. There is undoubtedly a more businesslike approach at the university's administrative centre, the Old Schools. A lot of effort is going into creating a crisper, faster-moving organisation with which industry can connect. "There is now a feeling, I think, amongst most people that that is enough for now," says Leslie, referring to the governance reforms, and clearly keen to consolidate the gains. Professor Alison Richard, the vice-chancellor newly arrived from Yale, now has a breathing space in which to build a wider consensus for modernisation.

There was progress, too, on the critical issue of intellectual property (IP). Cambridge's position was notoriously untypical - historically giving academics more rights than other universities. Last year it began to fall in line, publishing proposals to extend its rights to IP, but with significant safeguards to protect academic freedom. Copyright would stay with academics, as would the right to decide to publish research. Leslie says draft legislation is in the pipeline, broadly based on the proposals. "My personal opinion is that this was a pretty good proposal for balancing these things out," he says.

And Cambridge's colleges: do they get in the way of commercialising ideas, and change in general? Leslie is not alone in finding Lambert's comments unfounded: "We are frankly still at a loss to understand that. They don't get in the way and we have no idea where this idea came from." It is a reaction mirrored in the colleges. Professor Peter Goddard, before leaving his job as master of St John's to take up a prestigious post in the US, called for caution on modernisation, pointing out that it was often the colleges that led change.

Paradoxically the university used the downturn to establish much better links with industry. There is a sophisticated and well regarded technology transfer office, and the university is enmeshed with the key planning and development players, such as the Cambridge Network and the Greater Cambridgeshire Partnership. It is also collaborating with Massachusetts Institute of Technology (MIT), backed by pounds 65m worth of taxpayers' money, to explore ways in which better links can

be made to industry. Cambridge-MIT Institute (CMI) is making progress, after a shaky start, and has already come up with one big idea that may be replicated elsewhere - knowledge integration communities (KICs). The scheme is to build groups, including students, graduates, academics, other universities, companies, suppliers, and government agencies, all dedicated to a specific knowledge-transfer project - for example, the development of a silent aircraft. It is an idea that may eventually engage dozens of top research-led universities.

Does industry think Cambridge is ready for another Silicon Fen boom? How would it like things to change this time round? The Cambridge Network links up more than 1,300 companies born of the boom. Peter Hewkin, its chief executive, reports that members have attracted pounds 30m in investment in the last five or six months, compared with zero over the past two years.

"This time round it would be good if we grew more companies beyond the gee-whizz idea stage - the stage when they usually got sold to the Americans - and instead created jobs that stuck around. We need a bit more 'D' to go with the 'R'." It was a common criticism of Silicon Fen, and indeed of most university start-up and spin-out communities in the UK, that they fail to achieve critical mass as stand-alone businesses. Nearly 80% of the 3,500 technology companies in the region have fewer than five employees.

"This is a very important moment in the cycle and the CSR flotation has shown people that things can happen again. But this time round there are many more people in town with the right experience." Cambridge now has a relatively sophisticated system of business support, including legal and financial expertise, and a well-developed venture capital system that has survived the downturn almost intact. It also has a cadre of managers who have grown businesses before. It is a sobering thought that it has taken more than three decades of development to put such a durable network in place - a warning to other universities that there are no quick fixes in building an "enterprise community". The university has played a key part in building up the skills base that has survived the downturn, through the St John's Innovation Centre and the Institute of Manufacturing.

Most of those involved in the first Silicon Fen boom agree it was too narrowly focused on Cambridge itself, with the result that the city overheated disastrously, creating chronic transport, housing and service supply problems. There are hopes this time that the benefits of development can spread out to Norwich and a new technology and biotech cluster based around the University of East Anglia, and to Adastral Park, near Ipswich, a technology park where several universities, including University College London, have remote campuses. A new link-up between 10 higher education bodies in the region, called i10, is also trying to coordinate development, and there are efforts to build a Cambridge-Oxford "arc", sweeping through the hi-tech centres emerging in Hertfordshire and Bedfordshire, including Cranfield University, and Stevenage's historic engineering cluster. The first Silicon Fen boom also fell short of ambitious plans to create manufacturing in the city. The high land values in Cambridge make this very unlikely, along with labour market problems, compounded by booming house

prices and poor commuter links. But there are already examples of remote manufacturing springing up, which may well be a model in the future. **Cambridge Display Technology** (CDT) undertakes prototype manufacturing at Huntingdon - although volume production is still exported to the far East. nCipher, which makes encryption devices for Visa cards, is manufacturing in King's Lynn. The East of England Development Agency (EEDA) hopes that an emerging industry in alternative energy technology - wind turbines - can draw on Cambridge's intellectual resources and promote production further afield, perhaps on the east coast, or in Peterborough.

"This kind of development will root these businesses more in Cambridge and the east of England," says Martin Garrett, of the Greater Cambridge Partnership, which includes all the key private, public and voluntary sector players.

Dispersal of R&D and manufacturing should take some of the heat out of the local economy and give local planners time to undertake much-needed improvements in infrastructure and services. "We have a big role to play in coordinating investment in sites where new homes and facilities can be built in Cambridgeshire as part of the deputy prime minister, John Prescott's, plans for sustainable communities. Therefore the message from us is that if Cambridge's growth is to be sustained, then investment must be made in affordable housing and transport," says Richard Ellis, chairman of EEDA.

If one service epitomises Cambridge's first boom, it is transatlantic flights from nearby Stansted airport, which flourished briefly but were cut after September 11. The government's announcement that it intends to press ahead with a second runway at the Essex airport is a huge fillip to Cambridge. Road and rail improvements are also in the pipeline, signalling yet another effort to end Cambridge's relative isolation.

In one sense, Silicon Fen was Cambridge's first industrial revolution, as it was largely bypassed by the first. The next few years will decide if that revolution is sustainable and can provide a model for universities across the UK and Europe. The university has a key role, and the signs are encouraging that it can play it in full. If it fails, however, given the opportunities that are in its grasp, the reckoning will be brutal.

Weblinks