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Title of the Year 2015

# Cambridge business

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## TOO TIGHT TO BREATHE

Should green belt be loosened a notch or two?

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april

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## manufacturing



**Frank Tietze** knows more than most about IP and hopes to help Cambridge and the UK do a lot better in the global IP charts

# patently *not* obvious



**C**AMBRIDGE is the home of innovation. It has been coming up with inventions for the last 800 years and in the last 30 or so has become brilliant at turning those ideas into a commercial reality. Which means that Cambridge is the perfect place for me – someone who is fascinated by intellectual property (IP) and how it can make or break a business.

It probably comes as no surprise that in 2013 more patents were granted for every 100,000 people living in Cambridge than in the next six UK cities put together. Interestingly, Cambridge is something of a UK anomaly in this regard.

As a country the UK files relatively few patents: China, the US and Japan file the most with Germany leading the charge for Europe. According to the latest available figures, Samsung is worldwide No 1 patent filer with more than 2,500 filed in 2014. Intel is at No 10 with just over 1,000. The top UK company, by contrast, is Unilever with

just 226. This suggests that while the UK has a very strong science base there is plenty of room for improvement in how it captures value from its IP.

But this is not necessarily straightforward. Companies need to take a strategic approach to managing their IP and work out how best they can exploit it. And they can choose to do this in a number of different ways.

ARM, for example, is one of Cambridge's biggest success stories. Its technology now reaches around 80 per cent of people on the planet. But, famously, it makes nothing. It has created an IP-based business model, licensing its technology to others who make the chips that power our smart phones and tablets and all those other devices that we take for granted.

Of course, Cambridge is awash with IP success stories, many of them emerging from the university. There is Solexa, for example.



This was a company that started in the chemistry department and has made it possible to sequence a human genome in a day. It had a strong IP awareness and patented early. In 2007 it was sold for \$650 million.

Granta Design exemplifies another way in which companies can develop IP – by creating value from data. A spin-out from the university engineering department, it licenses databases which contain information about the properties of thousands of materials. For engineers, having all this data up-to-date and in one place is invaluable. The IP lies in the way the data is collected, organised and analysed.

Patents are just as important for relatively low-tech inventions. One of our former PhD students developed a bag that can be opened and closed with one hand. This makes it ideal for situations where hygiene is important, such as doctors' surgeries. In its first

commercial application it has made its way on to the shelves of the German equivalent of Boots alongside products from Unilever and Procter & Gamble. The inventor realised very early on the need to take a strategic approach to patenting, and therefore scoped its patents very broadly in order to give the company protection for a wide range of products in many different markets.

So there are many different ways a company can use IP. My interest lies in helping firms understand what their options are and choose those that will maximize their returns – and support the overall business strategy.

For technology-based manufacturing companies, IP is clearly fundamental to their business and they should already have expertise in this area. But they may not be thinking sufficiently

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strategically or making the most of the patents they already have. For example, some companies choose to make their IP freely available, in what is called a “patent pledge”.

This is a strategic decision they take in order to establish a technology as a standard and thus drive revenues by increasing take-up and then selling complementary products. Developing tools that help companies manage their IP more strategically is one of the ways in which I try to help firms with the research done by my group.

Let me give another example. Companies that hold large patent portfolios tend to focus on the few which are currently most valuable. And many of their patents may indeed have little value. But there is often a tranche in the middle which could benefit from closer scrutiny. It is often possible to unearth value that might be lying dormant. Even if the company has no interest in developing the product itself there may be people out there who are – and would be interested in licensing the IP.

Trawling through patent data for possible partners is, however, not something to be undertaken lightly. It takes some serious data analytics to work through the world’s 80 million or so patent documents. Fortunately, there are tools and techniques that can help with this. While there are already plenty of them out there – and more being developed all the time – firms still struggle to extract valuable information that really helps with strategic decision-making. This is another area of my research.

I take a ‘relational’ approach to all matters IP. As technologies have developed and products become increasingly complex, companies that would previously have been able to make everything themselves are now forced to collaborate. A smart phone, for example, is likely to have around 1,000 patents in it. The question then becomes how do these companies work together and how do those which hold the IP make sure they get the value from it?

The term ‘open innovation’ was coined around 2003 to describe this collaborative approach. There are a number of different models companies that work together can decide to take, whether it’s sharing the IP or licensing it – all of which have their own challenges.

When I arrived in Cambridge – the UK’s IP hot spot – just under two years ago, I was a little surprised to find there was no IP interest group for manufacturing companies. I decided to launch one, which we call IPIG and it now has 13 members.

We meet three or four times a year with the members deciding the agenda and together we discuss some of the challenges they may be facing.

Alongside the interest group, I run the



Strategic IP Forum. This is an open event series which runs two to three times a year focusing on strategic IP topics from a business perspective. Cambridge is already doing more than its fair share of innovating but it would be nice to think that it will continue on an upward trajectory – and help the UK climb nearer to the top of the patent-filing charts as well as becoming more skilled in managing IP.



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