

INTELLECTUAL PROPERTY: CHINA IN THE GLOBAL ECONOMY - MYTH AND REALITY

Briefing Note

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About the Author



Ian Harvey was CEO of BTG plc from 1985 until his retirement in late 2004. During that time he oversaw the privatisation of BTG in 1992, its public flotation in 1995, a demerger of part of its business and three Rights Issues totalling £250 million to raise business expansion capital from its shareholders. BTG was the world-leading technology commercialisation company which had been patenting and licensing globally since the early 1950s. He was Chairman of the UK Intellectual Property Institute from 1999-2011.

Following a degree in Mechanical Sciences from Cambridge University, his early career was as an engineer with Vickers and Laporte Industries in the civil, aerospace and chemical industries. After an MBA from Harvard Business School, he was with the World Bank in a variety of roles in South Asia and French-speaking West Africa.

He is: Chairman, IP Center Advisory Board, Tsinghua University x-lab, Beijing; Adjunct Professor, Imperial College Business School, London and member of its IP Centre Advisory Board; Advisor to NTEM, Tianjin, China; and, a Fellow of the University of Nottingham. He is also a Member of: the Industry Joint Advisory Board, Center for IP Studies (CIP) Chalmers University of Technology and Göteborg University, Sweden with the Intellectual Property Institute of Norway; the Global Advisory Board, Innoveas AG, Germany; the Board of London Bioscience Innovation Centre; and, the Advisory Board, International Intellectual Property Institute, Washington DC. He has an honorary Doctorate from the University of Wolverhampton.

Other appointments have included: Chairman of the UK government's Intellectual Property Advisory Committee (2001-2005); UK Prime Minister's Advisory Council on Science & Technology (1989-93); Advisory Panel for Science & Technology Policy Research Unit of Sussex University (SPRU) - (1989-2003); Air Products & Chemicals Inc. European Advisory Council (1999-2005); Policy Committee of Cancer Research UK (2004-6); Director, Primaxis Technology Ventures Inc., Toronto (1999-2005); Particle Physics and Astronomy Research Council Appointments Committee (1999-2008); Course Professor, Tsinghua School of Economics and Management, Beijing (2009-2014).

He has been a student for many years of the history and trends of global invention and technology development and the closely-related role of IP. He has written many articles and book chapters and lectures widely on global intellectual property and technology issues, particularly as they relate to business. He is currently involved with the development of intellectual property in China and working for the teaching of intellectual property as a fundamental component of strategy in business school programmes worldwide.

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EXECUTIVE SUMMARY

- The role of IP and its enforcement in China is much more advanced than most people realise:
 1. IP law in China is of a high quality by global standards.
 2. The quality, cost and timeliness of the “rights” (patents and trademarks) granted to foreign firms under Chinese law compare well with the rest of the world.
 3. Enforcement of patent rights is much cheaper and faster than in most developed countries. The courts, including the IP Tribunal of the Supreme Court, are handing down some very sophisticated judgements. The ability to enforce varies in different localities in China.
- Since 2004 there has been more patent litigation in China than in any other country, including the USA. Around 98% of cases are Chinese company suing Chinese company.
- About 95% of the foreign companies litigating their patents in China win their cases (compared with 30-40% of foreign companies litigating their patents in the USA).
- Enforcing copyright has been more difficult but is getting better in the most developed areas of China.
- Around 2005 China had a major shortage of patent examiners to handle the rapidly increasing number of patent applications. Through a massive patent examiner recruitment and training programme it has closed much of the gap. Similarly many judges lacked IP skills but this has also improved. The EU and UK have taken a lead in helping train both judges and examiners.
- Many (not all) of the alleged IP “problems” in China are “self-inflicted wounds”, such as foreign companies failing to file for patent or trademark rights in China (as they must in each country where they want protection).
- British companies file fewer patents in China than Switzerland or The Netherlands and one fifth those of German companies.
- China shows signs of regaining its historical creative and innovative position. Since 2010 Chinese entities have filed more patent applications in China than US entities do in the US¹. Chinese universities now file over four times as many patents in China as do the US universities in the US and over twenty times those of UK universities in the UK.
- However, China currently files fewer than 5% of its internal patent applications outside China. It has a major IP deficit in global markets – it has only 3.5% of triadic (US, EU and Japan) patents that a developed country would expect to have, given its R&D spending.
- It appears that the leadership in China has a deep understanding of the role that IP plays in a knowledge-based economy. Its actions suggest that the PRC is intent on having a world class IP legal and enforcement system which is both understood and used. Former Prime Minister Wen Jiabao said on many occasions “competition in the future is competition in IP”.
- By contrast, there is often an anti-IP tendency in Europe. This may hobble Europe in its global markets just as China becomes a major IP player.

¹ NB “invention” patent applications in China versus comparable “utility” patents in the US.

Introduction

Many people do not understand the seismic shift in IP that has been taking place in China.

China is on the verge of becoming a major technology and IP generator, creating a tidal wave of patents likely to wash over the US and Europe's shores in the next two decades, enabling China to dominate significant technology areas. This stems from the recognition inside China (largely missed by foreign observers) of the fundamental importance of IP to economic growth as well as the natural creativity and inventiveness of the Chinese. By contrast, particularly in Europe at some deep political levels, the value of intellectual property is often challenged, putting in jeopardy Europe's competitive base in its global markets

Most foreign observers look at the still imperfect state of patent enforcement in China and miss the profound changes that have taken place over the last twenty five years. To understand this, there are three components in an effective IP regime:

1. the underpinning law,
2. the cost and quality of the patent "right" acquired, and
3. the effectiveness and cost of enforcing that right

1. IP Laws

China introduced its first patent and other IP laws in the mid-1980s, to become compliant with the international Berne and Paris IP treaties. Since then it has passed many further updating revisions so that, today, its IP laws are of a high quality by global standards. It recently made a further revision of its patent law after consulting widely internationally on the draft.

The IP laws are based on Civil Law (similar to most of Europe) as opposed to Common Law (UK, USA). The German Justice Ministry has played an instrumental role in providing advice and support for this process over the last twenty years. Some of the criticisms voiced by US companies (for example, no "discovery" in litigation) would apply to any Civil Law system and not just China.²

2. IP Rights

IP rights for foreigners are generally of good quality, reasonable cost and timely. Patents issued to foreigners by the Chinese Patent Office have usually been well "examined" by their best patent examiners. The 20-year lifetime cost (\$20k-\$50k) of a Chinese patent is about 10 per cent of the total cost of patents for the G8 countries. Similarly, a granted trademark in China is generally of good quality. It used to be the case that the shortage of trained and experienced patent examiners meant that patents issued to Chinese inventors were not always as critically examined. This problem has been addressed through a massive programme to recruit and train patent examiners³. The time to grant of a patent is usually less than the EU and Japan and slightly longer than the US.

3. IP Enforcement

Although some problems remain, the third area, enforcement, has improved substantially and continues to improve. It is quite possible to get a patent or trademark enforced through the Chinese court or administrative systems. Many foreign companies have successfully litigated against products which have infringed their patents or trademarks. The cost is not high - \$60,000-\$120,000 - compared with about \$100,000 in Germany, \$500,000 in the UK and \$5+million in the US.

² It is the expensive discovery process (taken to its financial extreme in the US) in the "adversarial" structure of Common Law trials that arguably leads to higher costs in the UK and US – but, some would claim, better justice.

³ See 3.1 below

The time for the entire case, through the appeal and to enforcement can often be very fast by international standards. It can often be as short as one year, compared with 2-3 years in the UK, 2-4 years in the Germany and 5-7 years in the US. As it is a civil law system, more time may be needed to collect evidence before the start of the trial. If the Administrative route (funded largely by the PRC government) is chosen, enforcement can take place in a few weeks and cost less than \$10,000.

The Chinese government appears to be aware of most of the unresolved problems and willing to address them:

1. In 2005 China had one third the number of patent examiners of the US but to handle a patent application volume which is now comparable. The Chinese Patent Office (SIPO) then recruited and trained annually between 400 and 500 patent examiners (many more than the total number in the UK). This was an immense training challenge which was supported by the UK and European patent offices. Today it has about 4,000 examiners compared with 6,000 in the US to handle a similar workload. In comparisons, SIPO believes that their examiner workload is heavier than that of the EPO but lighter than in Japan or Korea. The training in the SIPO institute for examiners is today regarded as rigorous by the EPO. Patent attorneys in Europe have commented on the increasing amount of prior art (not from China) that is being identified by SIPO examiners but not by those of other offices.
2. The quality of the first level courts is variable. In 2005 about sixty percent of the one thousand judges had no IP legal training⁴. Following a government training programme, funded by the EU, most judges hearing IP cases now have had formal IP training.
3. Relatively independent provincial governments do not always recognise that their courts need to be impartial between foreign and Chinese litigants. To counteract this, the central government has actively encouraged foreign firms to use the recently-created “federal” IP Tribunal of the Supreme (Appeal) Court, whose decisions have been sophisticated and of very high quality.
4. Corruption is recognised as a problem, particularly in the least developed provinces. In addition, local judicial systems are not always fully independent of local government which, in some cases, may influence court decisions. Structural changes to counter this include the central payment of judges, limiting the time judges can spend in any one jurisdiction and in their home area.
5. Because of such variations across China, forum shopping (which is common in the US and Germany) for the appropriate jurisdiction in which to litigate, is also now important in China.

In 2012, there were more total IP as well patent litigation cases filed in China than in any other country, including the USA (Graph 1). Over 98% of these litigation cases involved only Chinese parties⁵. Chinese companies today are acting as though their IP is important, is worth defending and that their judicial system is worth using.

In the 2% of patent litigation cases brought by foreigners, about 95% are decided by the courts in favour of the foreign patent holder⁶ – compared with perhaps 30-40% in front of a jury in the USA⁷. This is counter to the all-too-common view that foreign patents cannot be enforced in China. Although enforcement of decisions is not always straightforward, well organised companies manage to do so.

⁴ This compares with the UK and Germany whose IP court judges are almost all IP specialists, or the US, where very few of the court of first instance judges hearing patent cases have specialist IP training or experience

⁵ “Chinese” includes Hong Kong, Taiwan and Macao but may include some joint ventures with foreign firms

⁶ This number is based on court-based data assembled by Rouse, the largest foreign IP advisory firm in China

⁷ Estimate based on US data and the author’s 19 year experience with BTG plc of litigation in many US jurisdictions. In one jurisdiction (Eastern Texas) no foreign company has ever won a patent case.

Self-inflicted wounds

Although problems do remain, more so in the copyright and trademarks areas, many Western companies' problems are self-inflicted wounds. The most common failures are:

1. Not registering their rights in China – unless you register your trademark, or design right or patent you will have no “right” to enforce – just as in the US or Europe.
2. Inadequate understanding of the market place. Many companies leap quickly into China without a proper analysis. This omission is surprising given that China has the population, and diversity, of the 50+ countries comprising the EU, North America and South America.
3. Limited or non-existent on-the-ground IP expertise. Two of the largest companies globally in their field – the Head of IP for China in one (American) has never been to China and another (Japanese) with substantial manufacturing in China the only local IP presence is a recent graduate. It is therefore not surprising that many firms do not understand and cannot cope with what is happening in IP in China. By contrast, 95% of Philips' 50 IP lawyers and patent attorneys in China are Chinese.
4. No delegation and too slow – the Chinese have a fast legal and enforcement system where a company must respond rapidly (for example 5 days to agree a seizure/enforcement order). With the low level of their IP representation in China, many companies must refer this to head office for approval and simply run out of time.
5. “We mustn't sue – it would annoy the government”. Far from it – the government and judiciary have made clear that the system is there to be used. What they will not accept are complaints from companies about “poor IP enforcement” but who have not made use of the legal and judicial routes available to them.

There are many examples of foreign companies that have been successful in China. At one end of the spectrum *Philips* (Electronics) has a €7b profitable business with 35 companies, 15 research centres and 20,000 employees in China. About 15% of its global inventions now come from China and it is planning for 50%. It already has 4 IP centres and supports “IP Academies” in 3 universities. At the other end of the size spectrum *Zwilling-Henckels* – the top-end German cutlery manufacturer with global sales of €250m and the oldest trademark in Germany – had a major problem with Chinese-origin counterfeits during the early 1990s. Today, there is no infringement (the city of Yangjiang has stopped infringing activity from its 2000 cutlery factories) and Henckels has its own factories in that city as well as 10 distributors, 6 sales offices and 130 points of sale across China. Its Head of IP is now a Chinese speaker.

Many of the “complaints” about the IP system in China are made by senior executives who do not understand IP, nor the mistakes their own companies have made in creating their own problems. The situation was, for example, reinforced by the USTR when it claimed “IP theft” because of the decision to invalidate a Pfizer Viagra patent by SIPO, which was then upheld by the Patent Review Board. Not only was the analogous Viagra patent in the EU previously invalidated by the European Patent Office, but 12 Chinese companies used due legal process to oppose the Chinese patent rather than embarking on infringing production, demonstrating respect for due legal process. Most patent professionals would support the view that SIPO's invalidation was fully merited. Regrettably, probably because of intense political pressure from the US, a Beijing appeal court later reinstated the patent. That action supports the view that the judicial system in China is not yet fully independent of the political process.

The Current Situation

China appears to be working hard to deal with its current IP issues, but some will take time to resolve, such as training. Meanwhile, the “constructive engagement” and practical support being followed by the EU will both help China and in the long term will establish good relations in a country where long term relationships are important. The Obama Administration had generally moved the US towards a similar more constructive engagement. The more recent shift of the EU and, even more recently, a US shift towards a more aggressive posture on IP is seen by most companies which operate successfully in IP-based businesses as not helpful.

The understanding of IP by the government in China has passed a tipping point over the past few years. Wen Jiabao, the Chinese Prime Minister, has said on many occasions: “*future competition in the world is competition in IP ...*”. Almost thirty years ago it established the right to protect and own intellectual property, a right it has still not yet formally extended to physical property such as land. Most actions indicate that China is intent on having a high quality IP legal and enforcement structure.

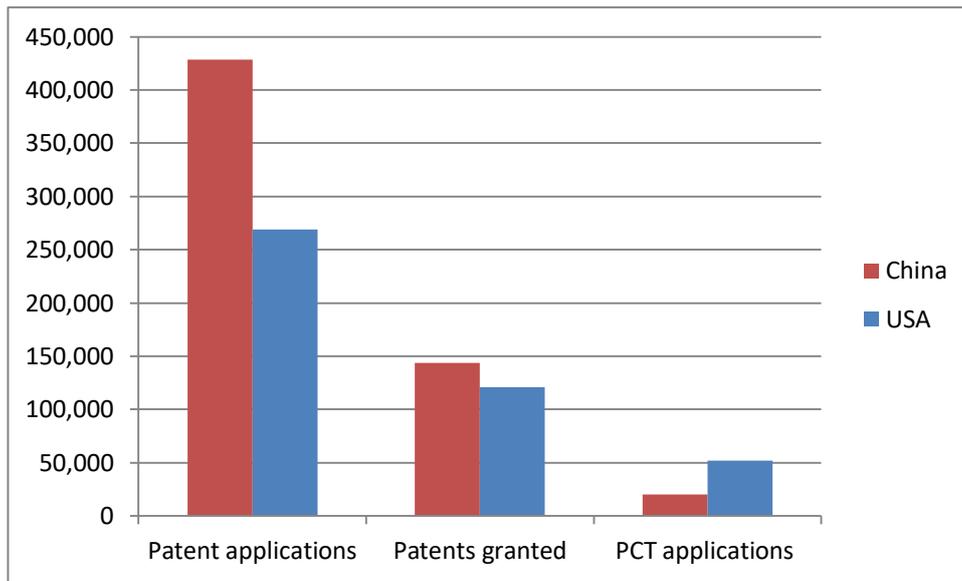
The reality, however, is that most people and companies in China still do not yet have a good understanding of what IP is, how it is used in business and what they should be doing with respect to IP. There are many conference aimed at addressing this problem. For example, the UK’s Intellectual Property Institute organised “IP in Business” training courses for the CEOs and senior managers of almost 600 of China’s largest companies. This was funded by a grant from the UK Foreign Office’s Global Opportunities Fund and matched by contributions from the Chinese Government and companies including GSK, AstraZeneca, BP, Rouse and LECG.

Domestic patent applications have been growing at 25-40 per cent a year. In 2012 the 428,000 “Invention” patent applications by domestic applicants in China were greater than the 270,000 comparable “utility” patents in the US by US applicants (see Graph 1).⁸ Chinese universities now file about four times the number of patents in China (about 75,000 a year) that US universities do in the US (12,000). This is about twenty times the number filed in the UK by British universities (see Graph 2). In China this growth has been driven in part by the government giving more credit leading to academic promotion to patent applications (not granted patents) than to published papers and also the low cost for patent applications.

One recent trend is the rapid increase in the number and use of utility patents by Chinese companies. These “unexamined” patents are in principle weaker than invention patents. However, German companies make good of the utility patent system in Germany and Chinese companies are now showing similar aptitude in China where they have increasingly been successfully suing foreign companies for utility patent infringement.

⁸ In Europe a granted “invention” patent has been examined by a patent office and is a strong IP right, whereas in Germany and China their “utility” patents are not examined and are therefore quite weak IP rights. In the US the examined patent is called a “utility” patent. Care must be taken when comparing such cross-country patent data to avoid confusion.

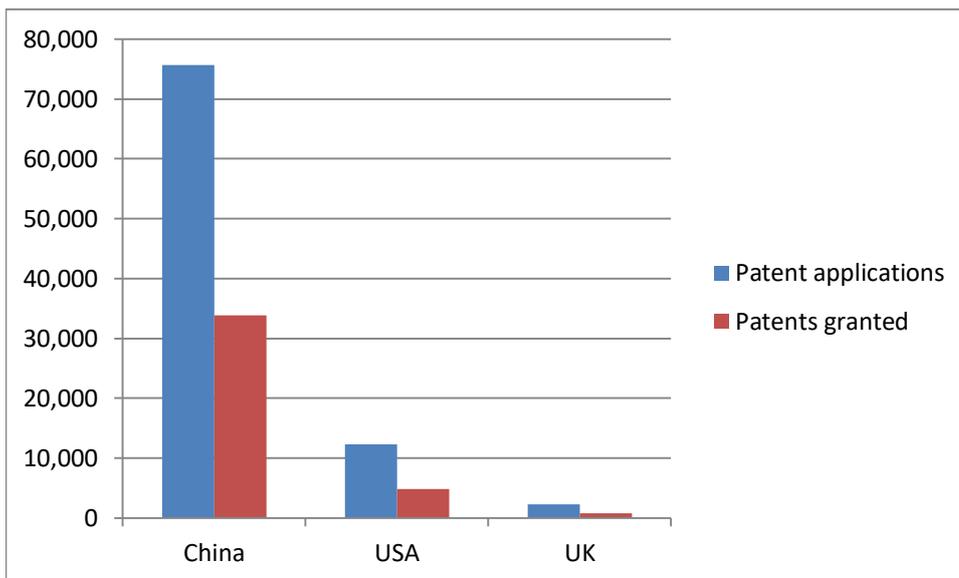
Graph 1: Patent applications, granted and PCTs – US & China 2012



Source: WIPO & SIPO – Invention patents (NB in US “utility” patents)

China, however, still has a steep international hill to climb from a very low base. China has a very small stock of international patents – in 2005 it had only 3.5% of triadic⁹ patents that you would expect given its spending on R&D¹⁰. China has said it aims to increase R&D spending to 2.5% of GDP and be in the top five countries receiving triadic patents by 2015. Chinese entities currently file a small but very rapidly growing number of “invention patents” outside China. China is now fourth globally in PCT¹¹ filings (Graph 1) but it will probably take a further 10 to 15 years for China to

Graph 2: University patent applications in their own countries – 2012



Sources: SIPO, HEFCE (UK), USPTO – Invention patents (NB In US “utility” patents) US applications - 2010 data

⁹ Triadic Patents: patents filed in Japan, the US and key European countries.

¹⁰ Sources: “Beyond the Great Wall – IP strategies for Chinese Companies”, BCG, 2007 and OECD Patent Statistics

¹¹ PCT: Patent Cooperation Treaty – the most common process for getting international patents

establish a stock of granted patents commensurate with its R&D spending. The lack of understanding and money to engage efficiently and effectively in the global patent system is an opportunity for foreign companies and universities to partner in China.

Far-reaching national IP education programmes in primary and secondary schools and universities are also having a significant long-term impact. Chinese companies and universities have begun to understand that the international IP system will bring them substantial benefits. Acquisition by SAIC of Rover Group's IP – and only the IP, Lenovo's acquisition of IBM's PC business for its unparalleled global IP position and China WanXiang's acquisition of Schiller, are indicators of some Chinese companies' rapidly growing IP sophistication. The fast-paced business culture in China is such that many companies in China prefer to build their IP portfolio through acquisition.

An Inventive Nation

Over the centuries, China has been a leader in fields from mathematics to shipbuilding. The entrepreneurial nature of the Chinese goes hand in hand with inventiveness. Most recently the world's first genetic therapy for a cancer was invented, developed and approved in China. The instant criticism from some in the west – that the regulatory process must have been flawed – recognised neither the excellence of some Chinese science nor the high quality and ethical standards of some clinical medicine in China.

Chinese companies and universities have begun to realise that if they can invent the next generation of high definition television, or mobile phones, they could be significant players in setting global standards. Having also patented these technologies globally, they can then decide whom to license. These patents are beginning to be filed now and their effect will become visible as technologies mature – perhaps 5-10 years in the case of high technology or 10-15 years for pharmaceuticals. A recent book¹² highlights the strides that some Chinese companies have made in both innovation and IP. One example from the telecoms industry is where China has been pursuing TD-SCDMA standards to avoid the payment of patent royalties to a large number of western patent holders.

There are many indications that, over the past 20 years, Beijing has been intent on having a good, enforceable IP system. It took 30-40 years for Japan, Korea and Taiwan to get to the same point. China, contrary to popular perception, has made very good and faster progress.

Although there are still problems (most recognised by the government) the current situation is far better than many foreign observers appreciate. Moreover the situation is rapidly changing and improving. For example, the author is an advisor to Tianjin, a city of about 11 million 120 km from Beijing. In Tianjin, there is an IP tutor in every school from primary through secondary. From the time they start school every child is taught about IP because:

1. "Stealing IP is like stealing a person's intellect"
2. "A modern economy depends on IP"
3. "IP theft is against WTO rules"

One of the best business schools in China, Tsinghua, has been running a course since 2009 on "Innovation – IP – Corporate Strategy". Tsinghua is one of the first business schools anywhere in the world to teach IP as part of an MBA curriculum and it is now one of their most popular courses.

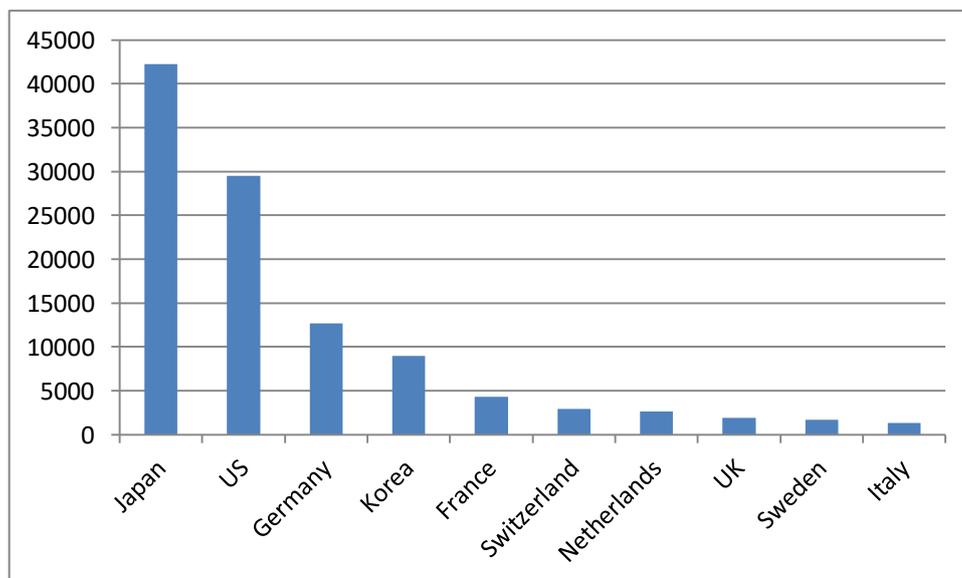
¹²Dragons at your door: How Chinese Cost Innovation Is Disrupting Global Competition – Ming Zeng & Peter Williamson, Harvard Business School Press, 2007

Threats and Opportunities

So China is both a threat and an opportunity for western business. The threat is that its strong manufacturing base will increasingly draw on its own technology, to the detriment of foreign business. The opportunities are that this technology is accessible to us and that China is a huge market where patent protection is beginning to be as important as in any developed country. Chinese companies and universities are generally eager to collaborate and are looking actively for partners. This window of opportunity may close as Chinese companies and universities develop their own expertise.

So what is Europe's response to the changes in China? Generally inadequate so far, although there are wide variations. In corporate UK, for example, China is not taken seriously except by a small number of large companies. British companies in aggregate file fewer patents in China than Dutch or Swiss ones, one quarter those of Korean companies and one fifth those of German companies (Graph 3). This is perverse, given that the UK leads EU investment in China and is one of the largest recipients of Chinese inward investment. Interestingly, however, the UK leads these countries in brands registered in China.

Graph 3: Top ten countries filing patent applications in China - 2012



Source: SIPO Annual Report 2010 – Invention patents (NB In US “utility” patents)

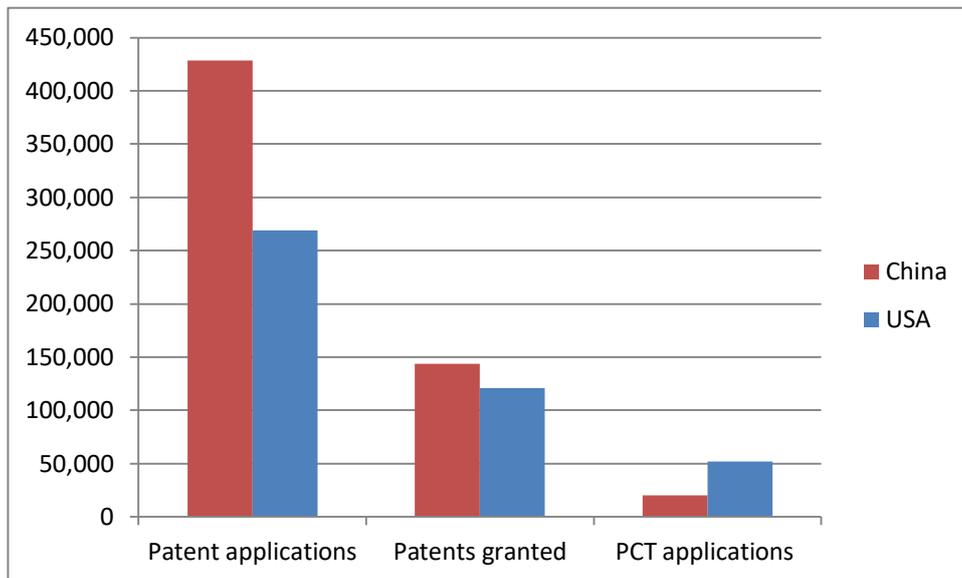
Companies' responses should be:

1. if you expect to access the Chinese market make sure you patent and trademark there;
2. establish an IP base in China;
3. start looking for your new technologies in China; and,
4. establish relationships with Chinese technology partners who will value your expertise and resources.

For politicians and policymakers, it reinforces the importance of turning Europe into a knowledge-based economy with technologies protected through strong, inexpensive patents in global markets. In particular, both the UK and the EU need to have greater focus for developing IP policy. Unless they do so, Europe and other developed regions will be beaten at the knowledge-based IP game which they invented.



Patent applications, granted and PCTs – US & China 2012



Source: WIPO & SIPO – Invention patents (NB in US “utility” patents)