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¹ For the "Technological resources
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(liste at june 1, 2010)

MANAGING INTELLECTUAL PROPERTY IN CHINA

by

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December 9th, 2009

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Overview

Even though Chinese legislation has undergone important changes and theoretically guarantees the respect of intellectual property, many companies are uncertain that their rights can be defended in a country whose culture and traditions are very different from those of the West. The recent misfortunes of certain Western companies, highlighted in the press, have prompted companies to exercise caution. Françoise Moisand and Franck Tetaz, specialists in technology transfer and intellectual property management, organised a conference in Shanghai in November 2009 with other leading French specialists in this field. What follows is their most current point of view on the opportunities and challenges of technology transfer with China.

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TALK : Françoise Moisand

China has a population of 1.34 billion, or, in other words, it represents 22 % of the world's population. Globally speaking, its economy ranks third largest, and may soon reach second place. China's growth has been exceptionally strong for the last ten years with an increase in GDP of 9.6 % in 2008 and between 8 and 9 % in 2009. However, in terms of GDP per capita, China ranks 100th in the world.

According to the 11th five-year plan (from 2006 to 2010), China must find a new growth model to advance towards 'a harmonious society'. It is faced with huge challenges in terms of energy and the environment : 45 % of the population live in cities, and it is estimated that approximately 400 million rural dwellers will leave the countryside for the city between now and 2030. China must also cope with social and geographical imbalance : 45 % of its GDP is produced by 16 % of the population on 5 % of the land. In order to respond to these challenges, China's strategy is to develop a new economic model based on science, technology, and innovation with the aim of reducing its dependence on foreign investments to less than 30 % over the next ten years.

This determination of the central government to control and harmonise growth sometimes meets with opposition from local policies enforced by administrators in the 27 provinces and autonomous regions and the four city-regions (Beijing, Chongqing, Shanghai, and Tianjin). China is one of the most decentralised countries in the world, and some local authorities, strongly competing with each other, oppose the government's policy of harnessing growth.

The historical turning point

Following a century and a half marked by Opium Wars, the Sino-Japanese War, and the Cultural Revolution, China opened its doors to foreign investment in the 1980s. Initially, this began on an experimental basis in the Southern region bordering Hong Kong and Macao, and was later extended to the North, and, after 1990, to the centre of the country. China was thus able to provide itself with an exporting manufacturing industry, and earned the nickname, 'the world's workshop'.

In 2007, China became the leading global exporter of high technology products in the field of IT and communication. However, at this stage it still only had a 'process trade industry' based on the assembly of parts imported from foreign subsidiaries that provided no true added value.

Nowadays, China invests massively in R&D infrastructures in order to strengthen its strategic industrial sectors for domestic needs, such as the automobile and pharmaceutical industries. The 57 national industrial zones for state-of-the-art technologies, which are recognised on a national level, have become regional development instruments, in the context of strong competition orchestrated by the central government. The Chinese are basically pragmatic and are unconcerned with the means employed or the duplication of efforts, as long as results are positive. These industrial zones are also designed to encourage the development of high technology, with 50 national clusters located near universities, 670 business incubators housing approximately 6,000 start-ups, and a very large number of technical centres and intermediary centres for transfer and innovation for the benefit of new high tech companies.

The dynamics and strategy of national industrial zones have changed remarkably over the past ten years. The province of Guangdong, the original Chinese model for the 'world's workshop', today invests massively in R&D with a greater budget than that of Shanghai. It did not think twice about raising labour costs to discourage industries from setting up high tech businesses with low added value in its province.

The past 30 years of reforms and technological training have seen the rise of corporate industrial leaders such as Huawei, a telecommunications company which, in 2007, was the fourth largest patent holder in the world, and whose technology has been promoted in the West ; and BYD (Shenzhen), the leader in rechargeable batteries, which has diversified into the automobile industry. Of note, are also 11 biopharmaceutical companies officially recognised by the WHO for the production of seasonal influenza vaccines that include Sinovac, which was officially recognised for the production of vaccines against H1N1 influenza. Times have changed from the days when Chinese companies sought regulatory approval rendered only by Chinese experts.

Reform of the research and higher education system

Despite its turbulent history, China has always attached a great amount of importance to science and technology. Today, it has become a genuine scientific power, and, in 2008, its R&D investments represented approximately 1.5 % of its GDP with yearly growth of between 15 and 20 %. Approximately 1.7 million researchers work in China, and this number has grown by 60 % over the past five years. In a short space of time, China will have more researchers than Europe and the United States combined. As far as the number of scientific publications is concerned, China has advanced from being the sixth largest publisher in the world in 2001 to second in 2008. However, China ranks tenth in terms of impact, or in other words, in terms of the quality of its publications.

The system of research and higher education has been reorganised in depth in order to incorporate an ever increasing number of students (27 million in 2008), but also to facilitate the establishment of centres of excellence for training and research. Some universities and institutes have been closed or regrouped, and others have been created. Some were converted into technical resource centres, and others into high tech companies such as Lenovo, a spin-off from the Chinese Academy of Sciences. The State has certified 220 academic laboratories of excellence referred to as the 'key national laboratories' by awarding them labels of distinction and providing financial support. Selection criteria to gain entry into these universities of excellence are even tighter than for entry into American Ivy League colleges.

Universities are present throughout the entire chain that promotes innovation. They own shares in technological science parks, business incubators and companies, and form large industrial groups, such as Tsinghua Holding, which even holds shares in a luxury hotel. Relations between Chinese companies and laboratories are good. They do not appear to be necessarily formalised into research contracts as they are in France, resulting in possible undesirable consequences. However, networks which bring together teachers, students, and companies are sound. They facilitate movement and employment. Yet co-operation with Chinese industries is still based on industrial development.

A system of innovation in constant flux

China built its innovation system in stages. It began with the development of already mature industrial sectors (such as the electronics, computer, and automobile industries) by drawing on foreign companies and imported technologies, and copying the Japanese model. It then started tackling new technologies such as biotechnologies, nanotechnologies, new materials and renewable energy, putting into gear its own innovation skills.

Research and innovation policy is dictated by the all-powerful MOST (Ministry of Science and Technology), which funds projects in noteworthy programmes of fundamental and applied research. It approves and designates 'key laboratories', technological science parks, and national business incubators, and provides legal expertise that may be of use in creating new technologies and standards. Research and innovation strategy has been developing through a medium and long-term plan, from 2006 to 2020, with the prioritisation of 11 areas for the development of China, including those devoted to energy, environment, and health.

Emphasis has been placed on 16 major projects and 24 'key technologies' in the 2006-2011 five-year programme. This strategy is periodically revised. In 2009, 6.5 billion Euros were earmarked over an 18-month period to accelerate the completion of 11 significant projects, including one for new drugs and vaccines.

The budgets for these projects will be doubled from financing granted by local authorities. MOST's policies are relayed on a regional level by plentifully endowed commissions for science and technology. They have the capacity of giving long-term financial support to high tech companies and concluding strategic partnerships with foreign firms.

For example, the city of Shanghai has decided to take the lead in services ranging from finance to biomedicine. It has managed to attract all the major pharmaceutical groups, and has used their resources to bring local laboratories up to standard, appoint hospital services, and train examiners to work in accordance with international standards of regulatory health product agencies. These groups were also encouraged, in the context of a win-win situation, to create or fund centres and research laboratories, and this, in return, has enabled them to develop their R&D at lower cost, and thereby gain access to a source of innovation and a rapidly growing market.

A bridge between China and the United States

Mobility of Chinese scientists to the United States began after the second half of the 19th century. Early in the 20th century, 70 high-ranking universities, founded on the English model, were opened in China. Later in the aftermath of the Cultural Revolution, many intellectuals fled to the United States. Today, overseas Chinese willing to return to their homeland are in great demand for their expertise in different institutions and think tanks, such as the Academy of Sciences and the Ministry of Trade, which act as networks of economic intelligence and technological watch with several hundred experts available on call.

The Chinese government has implemented a policy of attracting top Chinese scientists, entrepreneurs, and professionals at all levels, presently working abroad. Those who accept, called 'returnees', are awarded the responsibility of heading up laboratories and technological platforms. Some returnees create start-ups to promote technology patented by the foreign universities where they were trained, and where they often continue to maintain their teaching activities.

The interchanges between China and the United States are such that a bridge has been created between the two countries in high tech sectors such as biomedicine and biotechnology, to the point of becoming a technological superhighway. This link between China and the United States should allow the United States to maintain its dominant position in the biopharmaceutical sector.

Industrial protection in practice

Beginning in 2006, researchers in China were encouraged to protect the results of projects incorporating new technologies, but they were unfamiliar with the culture of industrial protection and technology transfer. Unlike what is imagined, China has been exploited for its high technology inventions, at least in the biomedical sector. Chinese research laboratories have been visited regularly by major pharmaceutical companies, and Chinese scientists have been willing to disclose their discoveries in the hope of procuring consultancy contracts or joint research projects.

In 2007, China was ranked 7th in the world in terms of filed PCT (Patent cooperation treaty) patents. It is currently in the process of building a patent 'Wall of China' that is apt to become as difficult to deal with as the intricate jungle of patents in Japan. However, the Chinese are, in general, presently reluctant to file patents abroad. Therefore, many inventions not followed

through by the Chinese, may still be taken up and developed in the West. Unfortunately, strategic technological watch is not really a part of Western culture, whereas Chinese thought encourages the creative process that consists of pragmatically improving what already exists.

Technology transfers

In the course of my work for Inserm (the National Institute of health and medical research), supported by the department of science and technology of the French embassy in China, I have already spoken about technological transfer between the academic sector and SMEs (small and medium-sized enterprises), and therefore I will not presently talk about transfers carried out with the major industrial groups, as they already have qualified personnel devoted to this.

Knowing how to make use of the administration

To succeed in the transfer of technology, one must first understand the environment, and identify the relevant contacts. With the assistance provided by advisers at the French embassy in China, one must know how the Chinese administration works, and how it can be used to one's advantage. Chinese civil servants working on scientific and technical commissions in the provinces and municipalities are approachable, respond quickly, and have a global vision of sectorial policies. Therefore, they can be viewed as partners. It is also suggested that foreign businesses take part in professional forums to gain more exposure and recognition. Unfortunately, I must admit that I seldom see French attendees at bio-forums organised in Shanghai or elsewhere.

Gaining trust

Trust is a fundamental asset in China and it is earned over time. Personal relations with the returnees must be nurtured, their working conditions must be taken into account, and when difficulties arise, it is to be understood that they cannot lose face. Through networking, otherwise known as 'guanxi', the relevant primary contact can be identified.

Working with two cultures

In France, we train Chinese researchers, doctors, and engineers, who, after returning to China, can stimulate and facilitate research projects and transfers with Chinese companies. This is a pool of talent, which we should profit from just as other Western countries do, through the maintenance of strong links with alumni.

Strategic analysis

Before any transfer can succeed, strategic analysis has to take place, as is customary in any country. The project's aims and markets must be defined, the state of technology and industrial property needs to be analysed, and transfer scenarios have got to be worked out. The needs and priorities of the Chinese market must be taken into consideration, and technology must be validated before any transfer can be planned. Other criteria must be taken into account, such as political and regulatory aspects of transfers, the strategy and the process of sectorial development implemented by the local government, and the infrastructures and available qualified staff, all while bearing in mind that China lacks middle-level executives.

Partners

The choice of a partner may prove to be sensitive, because the quality of companies is difficult to assess. In Shanghai, for example, about 500 companies claim to be active in the biotechnology industry, but 90 % of them just provide services for research and industry. Yet it is estimated that 50 companies can provide quality services that reflect good practices in this sector. It is essential that true R&D capabilities of a company be verified on site, beyond what is presented on their websites.

Priority must be given to partners who are recognised by the local authorities and whose legal and managerial structure is proper. One should be wary of intermediaries. A label awarded to a company through the Programme 863 or the Torch Programme for its superior level of technology is a guarantee of its true R&D capacities.

Negotiation

A Cartesian approach to negotiation in China must be left aside, and each case must be considered in its own right. Negotiations take place in an area mid-way between professional and personal affairs. It is very important to understand the nuances of various positions and the motivations of the negotiators who may be switched during the course of negotiations. But generally present are a 'silent' person (who controls the purse-strings) and a scientific returnee, who is always an expert full of questions.

During these negotiations, time is impossible to manage. Intense activity may be followed by a long period of quiet. Such breaks in the rhythm are not necessarily meant to be tactical, even though they do help evaluate trust and motivation, but most decisions are taken collectively, and this requires time. Generally speaking, negotiations give the impression of being disorderly. In the United States, an agenda is strictly followed, and at the end of the meeting answers to various questions have been collected. In Latin cultures, the process is known to be more complicated. However in China, it is genuinely difficult to comprehend what is going on.

It should not be forgotten that a 'yes' does not necessarily mean that there is agreement : it simply means that one has not said 'no'. It is essential to anticipate various scenarios so that the Chinese negotiator will not lose face and a solution can be reached. If he appears to be too jovial, this is often a sign that he has not understood. It translates as a feeling of embarrassment which risks curtailing negotiations.

After the transaction

Once the transaction has been concluded, an intermediary must be found to ensure follow-up. It is impossible to establish an R&D programme with a company, or to apply for grants, or to stay up-to-date with regulations without having a person of trust on site. Generally this should be a returnee who should be remunerated accordingly or given a share in profits from the project. However, it is difficult to secure the loyalty of a project manager without creating a legal structure on site, and this is undoubtedly a constraining factor in the success of transfer in China.

TALK: Franck Tetaz

From a European point of view, the way in which intellectual property works in China appears to be complex. However, from a Chinese point of view, the opposite is true in Europe. In order to sue for the infringement of a patent in Europe, one has to contact 27 courts and launch 27 actions in 18 different languages. With these 27 patents, one covers 4.4 million square kilometres and 500 million inhabitants. In China, with a single patent, one can cover 9 million square kilometres and 1.4 billion inhabitants.

A few figures

According to the Chinese Patent Office (SIPO : State Intellectual Property Office), the increase in the total number of patents filed in China between 2007 (700,000 patents) and 2008 (800,000 patents) can be attributed solely to the Chinese : the number of patents filed by foreign companies remained stable (100,000). The foreign countries most active in the Chinese market include those in the Pacific zone, including the United States. In 2006, the Japanese filed 37,900 applications, the United States 23,500, Korea 10,600, Germany 8,700, the Netherlands 3,700, and France 3,600. My Californian colleagues turned to the Asian market more than to the European market. Not only is the European market considered complex and difficult to penetrate for foreign companies, but in view of the energy used by Asian countries to promote innovation, their potential for innovation is judged to be superior to ours.

Nevertheless, one should put these figures into perspective. Whereas Westerners try to protect inventions in their entirety, Asian countries have a very restrictive practice with regard to intellectual property, and prefer granting patents to very precise inventions. Furthermore, not all disciplines are equally represented. A biopharma (or bio-pharmaceutical) company will always register fewer patents than an electronics company where the innovation cycle is much more rapid. This explains why Germany is relatively well represented because of Siemens, as is the Netherlands, because of Philips. Currently, there is an increase in European investments in the biopharma area because China is increasingly interested in this sector and is trying to attract Western companies to develop it.

The Patent Co-operation Treaty in China

To file patents abroad, most companies today make PCT (Patent Cooperation Treaty) applications which apply in about 180 countries. This ensures some degree of protection potential abroad without spending large amounts of money immediately which are normally associated with patent registration (especially for translation). First of all, the company verifies the advantage of the invention. After a period of time defined by the treaty (approximately two-and-a-half years), the company has to file a patent in each country where it intends to protect its invention.

Currently, the number of PCT applications is rapidly increasing in China for one simple reason : in the context of the Plan, China has decided to file 15,000 PCT applications from now until 2015, whereas there are currently only 6,000 filings. The government has helped to finance this project for about 1,000 Euros per filing, and the companies constantly file to show that they are trying to reach the objective set. However, when it is time to file the patent abroad, most give up because they do not appreciate the advantages of doing. Apart from a few important companies established in Europe or subsidiaries of European companies set up in China and benefiting from government aid to file PCTs from China, the market is essentially Chinese. According to a study carried out by 'Managing IP' magazine, only 30 % of PCT applications filed by the Chinese result in patents filed in Europe.

Organisation of intellectual property in China

China has signed all the international treaties concerning intellectual property. In this respect, it has aligned itself with the systems of modern countries.

Laws

In terms of intellectual property, China now has sophisticated laws which are comparable with ours. A recent change included the criterion known as the 'absolute novelty' requirement. It is one of the fundamental principles in patent law. If an inventor publicises his invention before he has protected it, he can no longer obtain the patent. Information about the product can also be spread by the use of the product : if one starts selling the product, one can no longer patent the invention. Until recently in China, the idea of 'relative novelty' still existed. The fact that a product can be sold in another country did not prevent it from obtaining a patent in China. This is how Schneider was attacked for forgery on a product which it had already sold in France, but not in China, and which it had not protected in China. Now the principle of 'absolute novelty' applies in China and this makes the situation fairer.

Governments and courts

Chinese examiners are trained and competent. Some studied in foreign universities, for example, at the Centre d'études internationales de la propriété intellectuelle (CEIPI : Centre for International Studies and Intellectual Property) in the University of Strasbourg. Chinese examination procedures are more comprehensive than those practised by the Institut national de la propriété industrielle (INPI : National Institute for Intellectual Property). They emphasise not only novelty, but also inventive step and sufficient description. A patent granted in China will have more weight than a French patent which is known to be based only on novelty.

Anti-counterfeit procedures can be carried out at an administrative or legal level. The administrative approach may include a visit to the workshop by the police in order to collect the products in question and destroy them. A company faced with a counterfeit problem, likely to be held liable in other countries, may use this administrative approach to show good faith, and to protect itself from blame in case counterfeited products are re-exported, even if the workshop (which has been closed down) is then set up a few kilometres further away the following day.

On a legal level, the efficiency of such actions depends on individual provinces. Some have very competent law courts which pass sophisticated sentences. We regularly receive information from our Chinese colleagues who list decisions regarding intellectual property which are favourable to foreign companies. For example, a Chinese company appealed an expertise carried out by a Chinese expert but refused access to the expertise data on the pretext that it was a trade secret. The court judged that in order to claim an expertise, the company should give access to this data.

All in all, one can now safely say that there is a system of intellectual protection in China and that it is in operation. We will now discuss what happens in the field.

Obtaining patents

In terms of obtaining patents, the Chinese approach is very restrictive. It gives the inventor the priority to produce whatever he wants, but does not give him the exclusive right of exploitation. In terms of description, the examiners tend to protect only examples which have already been created. One may try to argue the case by supplying documents which show that the invention could also function in other fields, but this will only be accepted if the relevant documents precede the registration of the patent application. In the United States, a company can produce an expert opinion, but it runs the risk that if the expert's declaration proves to be false the patent can be rejected. In China, this is impossible.

Faced with these difficulties, it is possible to appeal and possibly win one's case. However, this undertaking is difficult. For SMEs (small and medium-sized enterprises) which generally have a limited budget for intellectual property, it is better to wait for the multinational companies, which have important financial advantages, to act and increase their appeal procedures until the law changes.

The same restrictive approach applies to brand names. A French company protected its rights in the spirits' sector, but at the time did not consider it necessary to do the same in its adjoining sectors. A Chinese company registered the same brand name for a beer, resulting in the French company being asked the extent of its distribution in China in order to establish if there was any risk of confusion. However, demonstrating the extent of one's distribution in China is not at all simple for a French SME in a market as vast as the Chinese market.

A few questions

A frequently asked question concerns the possibility of covering the entire Chinese territory with a single patent. In theory, it is possible. In practice, it is very difficult, in particular for commodity products which are easy to make and export. However, one can minimise the impact of imitations by being present on site and constantly checking. One must also not forget that the market in the regions of Shanghai and Peking is the equivalent size of the entire area of the European market. Therefore it is not necessary to worry about the other parts of the country.

Another question concerns the durability of relations with Chinese partners. A private individual perfected a new model for a fishing float and had signed licensing contracts with Chinese companies. These companies paid him what they owed for the first two or three years and then suddenly stopped. The individual now has to pay for his patents and has no more revenues. To avoid this sort of situation, it would be wise not to get involved in this kind of partnership.

Having taken all of these factors into account, one may well ask whether filing patents in China is a good idea. I think it is because the patent has several uses. The first consists of putting a barrier at the entrance to a market and thereby adding value to the invention through licenses and being able to go to court to seek justice. However one very important use of the patent in China consists of preventing one's competitors from protecting invention in one's place and to their profit, which is part of the management of the risks. Often companies are victims of the first distributor who comes knocking on their door. The distributor registers the brand on his own site and then asks the company to buy it off him. If the company accuses the distributor of having stolen this brand name, it is up to the company to prove the extent of its distribution in the market. One must therefore protect one's brand on the Chinese market before one even establishes one's first sales contact. This step clearly entails a cost, but the cost of insurance is always lower than the cost which might be incurred as a result of an accident. The fact of having a patent, despite all its faults, enables transactions in China to take place satisfactorily.

DISCUSSION

The Shanghai seminar

Vincent Lamande (Réseau CURIE) : *A Franco-Chinese seminar on technology transfer and intellectual property took place in Shanghai from November 17th - 18th last year. It was organised jointly by the Réseau CURIE and the Shanghai International Technology Transfer Network (SITT). I would like to thank Françoise Moisan very much for her very active part in the organisation of this seminar. One of the lessons I learned from it is that in China, technological transfers as a result of public research exist mostly in the creation of start-ups and are based on incubators.*

We signed an agreement with SITT (which is the equivalent of the Réseau CURIE in China) to continue our exchanges and we have already fixed several meetings for 2010. Our Chinese colleagues will come and visit the centres of technological transfer in our competitive clusters and take part in the CURIE conference which will be held in June in Grenoble. We will take part in the Shanghai World Expo later on this year.

Preventing a competitor from protecting the invention

Question : *I thought that a French patent was sufficient to prevent another company from obtaining a patent for the same thing in China, and having the right to use its own invention without a license. Am I wrong ?*

Franck Tetaz : Filing a patent does not give you the right to exploit the invention because other parties may exist who also have rights, and one has to study these rights carefully before being able to exploit them. On the other hand, protecting oneself by filing a patent for one's invention on a specific filing date will mean that those who try to obtain an identical patent after this date will be refused.

When a company ('A') makes a PCT application, it has 18 months of 'secret' time before the patent is published. If company 'B' files a patent application just after company 'A's' application, company 'A's' application will only be opposed in common countries because, during the 18-month delay in waiting for the publication of the patent, the application cannot be opposed in an absolute manner. Publication of a patent establishes an absolute opposability (ie. inability on the part of other companies to file an identical patent) throughout the world, but only 18 months after it has been filed. If a Chinese company files in China after the French company, and the French company does not confirm its application in China, it is the Chinese company which will obtain the patent and not the French company. A PCT application is only considered as an application in the country – China for example – if it is in fact subsequently filed in China. If the French company does not file this operation in China after the PCT, it is as if it never filed a patent application at all. The patent application in China by the Chinese company, even though it takes place after the French PCT application, then becomes the first patent application for this invention in China. The principle of absolute novelty is well maintained.

Q. : *Is it advantageous for a French SME with a small budget to make a PCT application and then immediately publish part of its invention in France so that the Chinese competitor does not gazump him ?*

F. T. : This may be a solution, but it all depends on the field in question. In mechanics or electronics, there is not a great deal of change between the initial invention and the eventual commercial product. In the biopharma industry, because development takes so long, there are a number of uncertainties regarding the finished product. In general, companies take out very wide-ranging patents which cover the development of the project over the long-term. In this case, if the company publishes the invention the day after it has made a PCT application, it risks damaging itself. Many American universities discovered, to their cost, the principle of priority. In the United States, they have a period of grace of one year after the publication :

during this year, this publication cannot be opposed. In Europe, it is a different case. One cannot make an incomplete registration, then publish, then complete the registration and correct the errors ; if one did this, the new registration would not be accepted from the initial filing date. The publication becomes obsolete and the patent cannot be granted. It is similar to what happened in the Myriad¹ patent affair.

The cost of patents

Q. : *If an SME files a patent without publishing anything, and then opens a PCT procedure a year later, and either abandons it or only pays a single annuity if it decides not to exploit its invention abroad, is this enough to protect it against a Chinese patent which would be filed three months after this one ?*

F. T. : The PCT application only offers potential protection. If this potential is not validated in the targeted country earlier than 18 months, it is as if it never existed in the first place. For an SME, the difficulty comes from taking the decision to file a patent in China with all the associated costs, especially those of translation, at a time when it is not certain that the project is even viable. However, we should emphasise that once this price is paid, the budget necessary to maintain the patent is not excessive compared to the cost of annuities in European countries. The overall expense therefore tends to be relatively small. The problem is that most of the expense takes place in the early stages of the project.

Q. : *In Europe, does the London Agreement not spare companies high costs related to patents ?*

F. T. : The London Agreement only reduces a small part of the costs – at the expense of France – since most of the applicants choose English as the patent language rather than French. This Agreement does not exempt companies from paying off their annuities country by country. For an SME, the budget necessary to maintain the patent in the 27 countries is huge. It is a budgetary difficulty for our SME clients, and limits protection in Europe for American companies which are generally happy to validate their patents in Germany, England and France.

The language of negotiation

Q. : *In what language do negotiations take place on technological transfers ?*

Françoise Moisand : The returnees play a very important role in the high tech sector, and so scientific discussions take place in English. However, the ‘silent’ manager whom I referred to, will most likely not understand English, or at least will appear not to do so. For example, he may be a manufacturer who made his fortune in the textile industry, and who has invested in biotechnologies for his own profit, but without really knowing much about the sector. He attends negotiations to test the water and to form an opinion.

Speaking Chinese can certainly help. It is possible, on a first visit, to be accompanied by a bicultural employee of the French Embassy in China, and the Coopool Innovation programme, operated by the science and technology department, can facilitate initial contacts. The fact that returnees have important responsibilities in running universities has its advantages (cross-fertilization) and disadvantages. These scientists keep in close touch with their former colleagues from the United States or Canada, and naturally prefer to collaborate and initiate transfers with them. One has to demonstrate that one’s own technology brings real advantages because competition in China is primarily directed toward the United States.

¹ See Jacques Warcoï, “La bataille contre le brevetage d’un gène” *Les Annales de l’École de Paris*, Vol. XII.

What are the consequences ?

Q. : *One gets the feeling that the registration of patents, above all, aims to protect oneself from Chinese competitors, and that Chinese companies try to acquire technologies and especially talent so that they can become independent as far as their R&D is concerned. In such circumstances, can one really expect a return on investment of technology transfer ?*

F. T. : Technology transfers are the price to pay for access to the market even if they naturally present an element of risk.

Q. : *Major companies having invested in Chinese R&D laboratories in the hope that their norms be recognised and that they can gain access to the market, realise today that they have made a number of transfers, but no money.*

F. M. : We still have little hindsight on the consequences of technology transfers in China. Major companies have experienced a number of failures, but it is not worth arguing about the past. China is in constant change. Ten years ago, it lacked the concept of industrial property culture and industrial structures, which could have permitted them otherwise to accept technology under more suitable conditions.

One thing is certain : one cannot let an SME fend for itself in China. It would encounter serious problems. The System@tic cluster had the excellent idea of creating an office in Beijing to help SMEs work with Chinese partners, and this initiative might extend to other industrial sectors. We could also ask the university and research institutions networks to organise partnerships for technological development and balanced transfers, and, as I suggested earlier, make use of Chinese scientists trained in France to launch innovative projects and create start-ups. We have competitive technologies, solid companies, talented engineers, top-class researchers, yet we lack a certain amount business perspective.

Presentation of the speakers :

Françoise Moisand : having graduated with a Ph.D. in biology and a Masters in economics, she was in charge of Inserm's technology transfer office, one of the first of its kind. She later was the project manager of an exploratory Inserm mission to understand technology transfer processes and the biomedical innovation environment in China.

Franck Tetaz : has a PhD in chemistry (Université Joseph Fourier, Grenoble). He was an adviser in industrial property and a representative of the EPO (European Patent Office). He is a partner in the Cabinet Regimbeau. He was in charge of industrial property for Aventis CropScience in Lyon, and in particular its genome activities.

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