Intellectual Property: A Tenuous Concept

BEIJING—The publishers of a comprehensive tome on China's copyright laws were recently found guilty of an embarrassing offense: copyright infringement. Their use of 60,000 Chinese characters from other published works in their publication suggests that the concept of ownership of intellectual property in China is indeed tenuous.

But the government has begun a big push to make patent and copyright protection more rigorous. The main driving force is international pressure: China wants to join the General Agreement on Tariffs and Trade, and intellectual property is one of many areas in which its policies must be made consistent with those in the West. There is also a strong domestic incentive: Better patent protection is essential for the success of thousands of small high-tech companies (see main article).

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Trying to send a message. China's new patent office.

Last year, China took a major step when it joined two international copyright conventions. (Ironically for scientists, this move curtailed their supply of free copies of scientific journals, which used to be pirated within China.) It followed this up in August with the first appeals courts for hearing intellectual property cases. And on 1 January, a new system of patent laws goes into effect, based on the European model, that lengthens the terms of protection and includes inventions not previously protected, such as pharmaceutical, biological, and chemical products.

Chinese entrepreneurs are not convinced that these moves go far enough, however. For one thing, enforcement of existing patents has been erratic, ranging from the brutal—the recent execution of a man for producing fake "Maotai," China's most expensive liquor—to the virtually nonexistent. "Small companies don't know or care about the patent law," says Yang Yuliang, chairman of the macromolecular science department at Shanghai's Fudan University. He says China is just too big and the economic rewards too great to prevent widespread piracy.

Indeed, Yang and others say it is easy to buy confidential information from research assistants, especially at a time when researchers earn less than most taxi drivers. They even doubt that their patent applications are safe in the hands of patent examiners. "The patent application process takes 2 or 3 years," said Jin Riguang, professor of polymer science at the Beijing Institute of Chemical Technology and holder of three patents. "How do we know we can trust the Patent Bureau" to protect information in the application? he asks.

Yang says the patent application process is so full of leaks that the only way to make money on an invention is to market it first. "If it's a low-tech product that everyone can copy, it's best to make a large production first," he said. "Then you control the market. If you get a patent, then the market is gone."

To understand researchers' frustrations, consider what happened to Jin. In 1985, he discovered that a colleague had sold to a factory in southern China his patented idea for making use of atactic polypropylene, a chemical by-product. But his attempt to seek retribution was foiled by another common problem—a reluctance to sue. University officials told him only that the action should be "criticized." "They even implied that I should be flattered" by the rip-off, Jin said.

Enforcement of patents may be lax, but protection of software is even less rigorous. The Patent Bureau has thousands of agents throughout the country, while the Software Registration Center has fewer than 20 people, all in Beijing. A Western diplomat in Beijing who specializes in intellectual property rights says China's software industry has been crippled by the lack of protection. "People generally don't regard software as a valuable commodity in its own right," he says. "This has prevented China's software industry from really taking off."

In one celebrated example, a collective enterprise was sued after it refused to pay for a computer system and instead simply hired away seven of the company's top designers. Although the company, Five Star Communications Ltd. of Nanjing, was awarded $15,000 for damages, Wang Zhengwen, head of the company's legal department, feels the same thing could happen again. "Recently, the leaders of several high-tech companies in Nanjing got together and decided that we don't dare to continue investing in research and development if intellectual property protection is not improved," he says. "It's safer to go into foreign trade or something else."

–Julie Chao

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reward scientific excellence, the president of Fudan University has offered a 10,000-yuan bonus for an article published in *Science* or *Nature*. So far, it has not cost him a cent.

A more permanent solution—raising salaries—may be on the horizon. The CAS hopes to do so by sending two-thirds of its staff to spinoff companies, leaving more money for those who remain. "The academy is trying to keep only 15% of its staff for basic research," says Hao Bailin, a chaos theorist at the Institute of Theoretical Physics. He leans forward with an impish gleam in his eye. "I think the percentage doing basic research has never reached 15%," he exclaims.

The question now is whether change will come fast enough for scientists at centers of excellence like the Institute of Theoretical Physics. Founded 15 years ago as a "new type of institute for China," lean and efficient, it has a staff of only 55, of whom 30 are scientists. Hao proudly shows a visitor its excellent library, the students and postdocs crouched over banks of Sparc workstations, and the many papers published in international journals. What the institute doesn't have is a cash cow. The physicists who work there have little to fall back on, and one safety net in the old system—cheap housing—may soon vanish. Rumor has it that a Beijing flat, which now rents for 20 yuan a month, will soon cost 200 yuan. Few have enough money to exercise the option of buying their units. "I just don't have that kind of savings," says one theorist, anxiously.

In the end, China's scientists can only hope that their country's colossal, chaotic experiment in market economics will work. Yet their optimism does not seem forced. This is a nation in which people sit for hours without complaint on the two-lane country road that links Beijing to its airport, stuck in a bumper to bumper caravan of soot-belching trucks and mule carts piled high with cabbages, while, less than 100 feet away, a new six-lane expressway stands empty, awaiting its opening this fall. This image sums up China today: congested, polluted, inefficient and frustrating, but offering visions of a boundless future, almost within grasp.

–June Kinoshita

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