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**HBR CASE STUDY**

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*by Willy C. Shih and Jyun-Cheng Wang*

## Case Study



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# Will Our Partner Steal Our IP?

One person wasn't smiling. Prime ElektroTek's chairman had just announced big news to the employees and managers gathered on the shop floor: The Taipei-based company, which over the past decade had evolved from manufacturing simple power supplies to designing hybrid electric power trains for automobiles, had finally secured a deal with Blue Sky Vehicles, a state-owned enterprise that was one of the most dynamic automakers in China. If all went well, Blue Sky would soon be using Prime's components in its energy-efficient cars and trucks.

"At last," the chairman had said, "we have a foothold in the electric vehicle market. While Blue Sky is an SOE, I think they really want to differentiate themselves, and they're willing to use a lot of our technology."

Lin Tung-Hsin, the VP and general manager of the automobile electronics unit, cheered. The workers standing near him applauded. The only person not applauding was Wang Hsi-Guo, the engineer who had led the development of Prime's power train technology.

Lin caught up with him afterward to tease him. "What's the matter, Professor?"

he asked, using the nickname Wang had earned because of his propensity to engage people in conversations about technical details. "Your lunch didn't agree with you?"

"I don't trust our new partner," Wang replied. "Our power train electronics are sophisticated and efficient—I think as good as anybody's. They're better than any technology Blue Sky has ever seen or used—but now we're supposed to jump for joy that it's buying a few of our components for a prototype, which may or may not end up getting produced? I'm sure you know what's going to happen." Wang shook his head. "As soon as they get their hands on the components, they'll tear them down and study them. Within a year they'll not only be making their own versions of our components, they'll be selling them to others. I don't call that the road to prosperity."

Lin patted him on the back. "I understand why you're nervous," he said. "But we play in the real world. We can't be afraid to mix it up with a big Chinese customer like Blue Sky. Remember, before we had this deal, we had no one."

"We had Apex."

Lin scoffed. Apex Automotive was a Taiwanese company that might generously be termed third tier. It had been

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an early customer at a time when most car manufacturers wouldn't even look at Prime because of its roots in the electronics business. Executives at Apex had been impressed by a test car Wang had built—a hollowed-out blue Volvo with a Prime drive train and a battery pack tucked inside—and the Professor had loved working with Apex, because of its managers' freewheeling attitude and loyalty to Prime. He had led a team that created several prototypes for Apex.

But the chairman had made it clear to Lin that Prime would never become a big player in the auto components business by working with small, frugal companies. And because first-tier automakers such as Nissan and GM typically wanted to build their own hybrid or electric power trains, Prime needed a powerful second-tier partner. That's why it had looked to China despite the risky IP environment there.

Blue Sky fit the bill perfectly. It was among the fastest-growing Chinese automakers, and it was racing to get into the hybrid market. During a long sales campaign that included a lot of relationship building, Prime had gradually moved up the ladder from supplying a few minor parts for dashboards and lighting systems to signing a contract for major components, and Lin was as ecstatic about it as the chairman.

Lin chided Wang. "In any case, you overestimate our new partner," he said. "I don't think they'd be capable of reverse engineering every one of the components."

"I don't underestimate any Chinese company," Wang said.

### Entering the IP Badlands

The People's Republic of China was, Lin knew, notorious as a place where companies lost control of intellectual property. Engineers there were adept at cloning products in many industries—he had seen this happen when Prime's power supply division had partnered with a Chinese computer maker. The Chinese company was soon selling copies of Prime's power supplies at steep discounts. And leakage typically didn't stop there: Once a trade

secret was out of the bag, it would spread to other companies. There were laws against such things, but going through the Chinese courts rarely resulted in recovery of sufficient damages to make up the cost of a lawsuit. Virtually every company on the mainland was a threat—Blue Sky very much included.

Prime's chairman knew these risks too, and during the long courtship of Blue Sky he had questioned Lin repeatedly about them: Would the carmaker be able to steal Prime's know-how? Did it plan to use Prime as a stepping-stone to becoming a vertically integrated manufacturer of hybrid power trains in its own right? Worse, could it end up selling those components on the open market?

Lin had reassured his boss. For one thing, Blue Sky was buying only select components. It wasn't buying the vehicle control unit, a critical part of the hybrid drive train. For another, Prime had embedded a great deal of tacit knowledge into some components—knowledge that was more "know why" than pure know-how. Lin had argued that although an outside company might be able to make facsimiles of the components, copying the hardware without understanding how it worked would result in a car that was close but not exactly right. Third, Lin had stated bluntly, Blue Sky's engineers didn't seem all that sharp when it came to systems engineering. In technical discussions with them, Lin had observed that although they were skilled at narrow design tasks, they weren't very good at understanding big, complex systems designs.

This view was reinforced a couple of weeks later, when Lin and the Professor accompanied the chairman to Guangzhou to visit Blue Sky.

Lin had been to the factory several times during the forging of the deal, but the trip was Wang's first. Lin could see that he was awed by the scale of the operation. Cars took shape by the hundreds on immaculate assembly lines tended by robot arms and white-suited workers. And the numbers the Blue Sky managers threw out

were tantalizing: Blue Sky was doing its part to help China meet its goal of producing half a million "new energy" vehicles in the next few years. Using components from Prime and other suppliers, Blue Sky was committed to rolling out at least five hybrid models within 12 months.

At a meeting later among the technical people for both sides, the mood was celebratory. Even Wang was smiling. Hoping to give him a chance to show off his knowledge, Lin encouraged the Blue Sky engineers to ask questions about Prime's technology. Someone asked why Prime had chosen to focus on series rather than parallel hybrid power trains. Lin was surprised to hear such a basic question. Wang explained that in parallel hybrids, such as Toyota's Prius, the electric traction motors and the internal combustion engine are linked to the drive train, and the battery is charged by both the engine and the brakes. When the brakes are applied, mechanical energy flows back to the traction motors, which then generate electricity. This interconnection makes the control system quite complex. Series is a simpler and less expensive way to go. A series hybrid, such as the Chevy Volt, runs purely on electrical power, with the gas engine functioning only as a generator.

Lin felt vindicated by the Blue Sky engineers' befuddled looks. He was sure the Chinese company didn't have the expertise to copy Prime's products.

Wang began asking his own questions. "So," he said, "you'll be creating the vehicle control unit yourselves?"

Yes, the Blue Sky managers said. The deal stated that in addition to supplying certain components, Prime would provide specs for linking them to the vehicle control unit—the car's brain.

That unit, about the size of a shoe box, would be a highly sophisticated device able to take commands from the driver and control the car's speed, acceleration, braking, and charging systems. When the deal with Blue Sky was coming together, Lin and Wang had at first assumed that the automaker would want to buy a vehicle

control unit from Prime. With Lin's approval, Wang had gone as far as to lead a team in building one specifically for Blue Sky. In addition to being highly efficient, the prototype was a marvel of embedded tacit knowledge. But in the end the automaker said it planned to build its own. Because a car gets its "road feel" from its vehicle control unit, first-tier automakers take pride in developing rather than outsourcing the unit. Blue Sky evidently aspired to join those lofty ranks.

"How far along are you?" Wang asked. "I know from our experience that it can be tough to design a really good vehicle control unit."

The Blue Sky managers looked at one another, seemingly unsure how to answer. Finally one of them said, "Don't worry. We're making progress."

During the flight home, Lin recounted this story to the chairman as further evidence that Blue Sky posed little IP risk to Prime. "These guys aren't systems guys," he said. The chairman nodded thoughtfully.

Back in Taipei, Lin asked Wang about the prototype vehicle control unit that had been built to Blue Sky's specs, and Wang replied that because there had been no need for it, it had been dismantled.

Lin groaned. "Can you put it back together again?" he asked. "Quickly?"

### One Important Condition

A month later the chairman stopped Lin in the hall to ask about Blue Sky's progress with its prototype vehicle. The chairman thought it ominous that there had been no word. Had something gone wrong?

Lin said he had heard nothing negative.

"We really need this deal to work," the chairman said, nervously slicking down a wisp of hair. "Blue Sky's competitors in China are already way ahead in selling hybrid cars and trucks. If Blue Sky gets seriously behind, it could be in trouble, and then we'd be in trouble. Blue Sky is the only big automaker that has shown an interest in us. If anything happens to this deal, we might be finished as an auto supplier."

Lin immediately began calling his contacts at Blue Sky, but person after person was noncommittal about what progress had been made. Finally the head of the hybrid unit invited him back to Guangzhou to see the prototype. The absence of fanfare was conspicuous—Lin and the Blue Sky managers and engineers met in an outdoor lot by the test track, where an unprepossessing two-door car was waiting. Lin got behind the wheel, stepped on the accelerator, and started driving around the loop. He could tell that something was wrong; he had expected much crisper performance, and the gas engine seemed to be cutting in too soon. Clearly the control system needed major work.

**Lin believed that the Chinese company posed little IP risk. "These guys aren't systems guys," he said.**

"I'm sorry," the Blue Sky manager said, reading Lin's expression. "We are still making adjustments to the vehicle control unit."

This was as far as they had progressed in six weeks? Lin suppressed the impulse to make a cutting remark. Instead he said, "We have one we can give you—one that was designed to work with the other components and to meet your specs."

"That's a big relief," the manager replied. "Your engineer, the Professor, was right about it being tough. We didn't realize."

Lin agreed to ship the unit as soon as possible. By afternoon he was back in Taiwan and had scheduled a meeting with the chairman for the next day. He was expecting to take grim pleasure in telling the story. It would allay the chairman's fears about the delay while demonstrating his own foresight in having Wang reassemble the prototype control unit—not to mention confirming his assessment of the Blue Sky team's lack of systems depth.

But the meeting didn't go as planned.

"I just got off the phone with Blue Sky," the chairman fumed as Lin entered the office. Lin had never seen him so agitated. "This is absolutely unacceptable!"

"I don't understand," Lin said. "Blue Sky can't make its own vehicle control unit, so they want to outsource it to us. We'll play a much bigger role in the development of their prototype, which means we'll probably get a much bigger share of their business going forward. That's a good thing."

"But didn't they tell you? There's a condition," the chairman said. "Blue Sky will accept our vehicle control unit only if the IP belongs to them."

Lin was so surprised that he could only echo the words. "Belongs to them?"

"Yes. We have to give them the source code for the software, and all the control system algorithms. If we don't agree, they won't accept the unit, which means they'd have no vehicle controller—and no car."

With all the discussion about reverse engineering, it hadn't occurred to Lin that the automaker might demand Prime's IP as the price of playing. He thought back to the many assurances he had given about the Blue Sky managers' not being rocket scientists. What would the Professor say now? That the automaker had been lulling Prime into a partnership that would strip the smaller company of its intellectual property?

"They claim they need it," the chairman said. "Without the IP, they say, they won't have any use for the other components we were hoping to sell them. So they'll find another supplier who will give them the whole package. But if we accept these terms, how can we sustain a business in China?"

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Should Prime release the IP for its vehicle control unit?