

Aichi Steel's Sensor Business Self-Destructed

A brother company of Toyota Motor Corporation neglected the advancement of technology and withered the "money making tree".

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Four years ago in 2016, Aichi Steel as a member of the Toyota Group had already been ahead of the "Nissan Carlos Ghosn incident" in criminally suing and arresting their former technology executives for stealing and leaking sensor technology embedded in smartphones. If the company had the technology to do so, people may think that they are splendidly developing and making sensor business, but in fact that is not the case. From the process of the trial, it seems that the important thing of large-sized transaction annihilation is repaired by "the case". The IT market, where there is no such thing as "Keretsu" as a manufacturer that has stopped technological progress, is relentlessly severe.

According to an IT industry official familiar with smartphone technology trends, the start of the downhill was a conflict of internal business policies over the delivery of sensors to Apple.

Aichi Steel Co., Ltd., which mainly manufactures forged products such as crankshafts for automobiles, has entered the small sensor market with MI sensors, which is indispensable for the electronic compass function of smartphones. Since it has a reputation for being suitable for measuring geomagnetic field, orders began to come in from smartphone manufacturers such as LG in South Korea, ASUS in Taiwan, Nokia in Finland and in 2012 years, Apple, the leader of the smartphone industry, finally offered to deliver it to iPhone6.

"Dissolution" of Sensor Subsidiary (AMI)

Here, In order to meet Apple's demands, Yoshinobu Honkura, who was the managing director of the company's MI Sensor business and technology at the time (currently the defendant of the criminal case), insisted on building a mass production line and developing a better sensor to deal with the weak point of MI sensor. However, Company top executives at the time kicked Apple and dismissed Mr. Honkura from the board in June 2012. In the sensor business, the company decided to narrow down its own production and instead leave production and sales to Rohm, which has a brand name in the electronic components industry, to convert it into a business model that earns licensing fees.

Mr. Honkura launched MagneDesign co., Ltd. in September 2012 with his own hands, aiming to develop a sensor that is 100 times better than the MI sensor. At the end of 2014, he succeeded in prototyping a new sensor element. In November of the following year, the confirmed GSR effect on the element was recognized as a patent, and he succeeded in developing GSR sensor, with different principles and methods than MI sensor.

The difference between the two is that the MI sensor detects a change in the impedance of the wire, while the GSR sensor detects the spin rotation of magnetization on the most surface of the wire. The way to make it is different and the opposite, whereas the MI sensor tensions the wire as loose as possible, whereas the GSR sensor puts on a strong tension above the elastic limit to ensure the effect. As any engineer knows, it is impossible to make something that is 100 times better in the world of electronic components from the same principle.

On the other hand, Aichi Steel, which steered the licensing business, re-challenged Apple with sensors jointly developed with Rohm, but it did not work. According to an IT industry official, "Apple strongly wants to improve the performance of its parts every time it comes out with a new smartphone. they only associate with places where are willing to develop technology."

As a result, the sensor business of Aichi Steel was found by reading the "Research and Development Activities" section of the securities report, but the momentum was lost. The description of the licensing business with ROHM was listed in the fiscal years ended March 31, 2015 and March 31, 2016, but has disappeared since the fiscal year ended March 31, 2017. Instead, "We are developing a magnetic lane guide system for projects within autonomous driving of the Cabinet Office SIP" and "We succeeded in developing a sensor module with built-in ball of baseball rotation analysis system in collaboration with a general sports equipment manufacturer." It is aimed at the field where the demand is extremely limited, and the description about the business where a lump sum quantity comes out like for the smartphone is not found. Aichi Micro Intelligent, a subsidiary of Aichi Steel Co., Ltd., which handles MI sensor-related products, was dissolved at the end of June 2020.

The Honkura patent is judged to be "effective"

From this background, Mr. Honkura's GSR sensor has not been commercialized yet, no matter how you think about it, Aichi Steel's sensor business is "self-destruction". but Aichi Steel (1) Criminal charges for conspiring with subordinates in August 2016 to illegally acquire, use, and disclose the trade secrets of Aichi Steel (2) Patents for magnetic wire alignment and heat treatment equipment acquired by Mr. Honkura through GSR sensor development in December 2016 are patent rights claiming to have used the trade secrets of Aichi Steel. Filed a provisional disposition order prohibiting disposition (3) In January 17 seeking damages of 1.5 billion yen for illegally disclosing and using Aichi Steel's trade secrets and filed a provisional disposition order (4) In September 18 the Patent Office filed a patent invalidation trial on Mr. Honkura's GSR sensor. claimed, and set up quickly.

Only when Mr. Honkura was arrested in February 2017, The mass media of Japan making a big fuss and after that is lurking, so little is being said about what happened to each incident, but the current situation and the results are as follows.

First, the two men were not charged with criminal charges in (1). However, the two have been arrested, charged, and tried on a second charge for illegally disclosing trade secrets to equipment manufacturers. As for (2), the Nagoya District Court decided to provisional disposition, but Aichi Steel withsd the appeal in February 2020 and settled it. (3) The lawsuit for damages was finally filed by Aichi Steel three years after the provisional disposition decision, and the trial will begin this fall. (4) The patent invalidity trial request was rejected and Mr. Honkura's GSR sensor patent was found to be valid.

In addition, Mr. Honkura's paper on GSR sensor technology has been published in Sensors, the most prestigious international journal in the sensor field, and JMMM, the most prestigious in the field of magnetic materials.

However, in the criminal trial going on in the Nagoya District Court, it is called a problem that Mr. Honkura wrote "magnet" on the whiteboard when he ordered an equipment to manufacturer the element he patented from an equipment company. "because it is a trade secret that Aichi Steel kept in the cabinet". a magnet is used to secure the amorphous wire that sticks to the —— If a large company manages the

know-how that even elementary school students seem to be able to think of in a cabinet, it becomes a trade secret.

The company which worked to improve the performance of the sensor, entangled the inventor who attracted attention from the world by the method of the branch and leaf, and convicted, and ruined the business by sitting on the existing technology is relieved. This story is not funny in Japan which is going to the science and technology-based country.