

**ASEAN SME CASE STUDY
IT COMPANY IN JAPAN
AKIMINE LIMITED, JAPAN
PURSUING AN ENVIROMENT-FRIENDLY BUSINESS VENTURE
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In 1999, Mr. Sho Kobayashi established Akimine Limited, with a paid-up capital of Yen 10 million (US\$125,000). The plant was built in Saitama Prefecture, about one hour by train from the center of Tokyo City. The initial line of business was the production of recycled computers and business machines.

Mr. Kobayashi was born and raised in a town along the border with Vietnam in the Guangxi Zhuang Autonomous Region in southern China. When he was in college, he majored in world history and learned how Japan emerged as No.2 largest economy in the world. He was so fascinated and curious to learn more about Japan. In 1987, he arrived in Japan as an exchange student to study Japanese modern history at the graduate school of Kumamoto University in Kyushu.

After completing his master's course, Mr. Kobayashi planned to return and work as a history researcher. However, in June 1989, a few months before his return to China, a massive demonstration broke out in Tiananmen Square, Beijing, which lasted almost 7 weeks, later known as "Tiananmen Square Massacre".

The demonstrators called for government accountability, freedom of speech, and the restoration of workers' control over industry. The government used force to suppress the demonstration. Although there was no official report on the exact number of civilian deaths, it was estimated to range from several hundreds to thousands. The aftermath of the protest resulted in strengthening the power of orthodox Communist hardliners and delaying economic reforms.

This incident shocked Mr. Kobayashi and he lost interest in returning to China. Instead, he decided to stay and looked for a job in Japan. After applying for several positions, and in 1990, he was finally accepted by a large plastic manufacturing company and assigned in the Export/Import Department.

Although he was happy working in the Japanese company, he also had a deep ambition that someday he will become an entrepreneur. But 1990, the year Mr. Kobayashi joined the

company, was the start of the worldwide recession, and economic crises, triggered by two major incidents.

The first incident took place in February 1990, when Drexel Bahnam Lambert, a major Wall Street investment banking firm famous for high yield bond underwriting, filed for bankruptcy under chapter 11. Its bankruptcy caused a financial crisis around the world.

The second incident was in August 1990, when Iraq invaded Kuwait, causing in worldwide crises in oil prices, combined with the drop in consumer confidence.

Consequently, the Japanese economic bubble began to burst and Japan, after decades of miracle economic growth, encountered successive financial crises and experienced price deflation for the first time since World War II (see Note 1, “bubble burst in Japan”)

The performance of the company where Mr. Kobayashi worked was gradually affected and it tumbled. The company took all possible measures to cope with the downfall, but eventually in 1998, it was forced to downsize the operation by laying off managers and workers as well. It was a tragic scene for him to watch his colleagues leave the company one after another.

This unpleasant experience together with his observation of a new business opportunity led him to start his own business.

Note 1.

After the 1985 Plaza Accord, the Japanese yen’s appreciation against the dollar hit the export sector hard, resulting in the reduction of economic growth from 4.4% in 1985 to 2.9% in 1986. The government attempted to offset the stronger yen by cutting the discount rate from 5% to 2.5% and implementing other stimulus plans, but this caused an inflation of real estate prices and stock market, creating one of the biggest financial bubbles in history.

The government responded by tightening monetary policy but it that triggered the market collapse: the Nikkei stock market index fell from the highest of Yen 40,000 in 1989 to Yen 15,000 by 1992 and the official unemployment rate rose from 2.1% to 4.7%.

NEW VENTURE OF HIS OWN

In 1999, Mr Kobayashi established his own company, Akimine Limited.. The basic concept of his venture was to recyce old electronic equipment, especially computers, fax/copy machines.

As a previous employee, he commuted to work, passing several garbage collection points where he saw several computers dumped at garbage collection areas. Wondering if they were still operational, he picked up one and brought it home to check if it was still usable.

Even though he was not an electronics engineer, he managed to test the computer and discovered it was still working. He thought Japanese consumers waste money and resources by discarding still operational computers and electronics devices in order to buy the latest models. This idea convinced Mr. Kobayashi that there is a potential market for these recycled devices in developing countries.

The company identified mainly two sources to collect used computers, fax and copy machines: leasing companies and scrap collection operators.

The leasing companies lease electronic equipments to offices and retrieve them at the end of the contract maturity, while the scrap collection operators collect these devices from homes and offices, and sell them to plastic and metal recycle factories.

Usually the leasing companies sell recovered old devices as scrap. Since Akimine offered better prices, the leasing companies were willing to deal with Akimine.

Akimine purchases old computers and office automation equipment from these two sources, erases all stored data, and repairs them for export. Thus, Akimine became a forerunner in the effective use of limited resources, and an exporter of recycled computers and other business machines to Malaysia, Indonesia, Vietnam, Myanmar and China.

The company's business model attracted much media attention. Television stations, business magazines and newspaper praised Akimine, the company that narrowed the international digital gap by providing goods to developing countries at lower prices and achieved effective reuse of limited resources.

In its first six years of operation, the company sold more than 500,000 recycled computers and copy machines. At the initial stages, it was not so easy to secure a large volume but later it became easier, thanks to the Appliance Recycling Law enacted in 1998 and enforced in 2001 (see Note 2, the Home Appliance Recycling Law).

Note 2. The Home Appliance Recycle Law

This new law required not only home appliance-makers but also consumers as well, to recycle used products and to shoulder a portion of the cost associated with the collection of used products. Every year, Japanese consumers discard approximately 1.8 million electrical

products, a volume of more than 600,000 tons. In Japan, landfill space got scarce and the processing costs started rising.

Moreover, people were concerned over dioxin pollution caused by the incineration of these products. Under these circumstances, a new law was formulated to promote environmental protection and the reduction of waste thru the effective use of recycled resources..

In 2003, his company's name, Akimine, reached even to China and Mr. Kobayashi was invited by the Chinese Government to set up a production plant in Beihai Economic Zone in Hepu County, Guangxi Zhuang Autonomous Region, near his home town.

Mr. Kobayashi's nostalgic memory of his home town prompted him to accept the offer and established Beiha Akimine Electronics Company in April 2004. Contrary to his expectation of stable sales growth of recycled computers, however, the market shifted to a different level within a short period of time.

The product cycle of the computer was made shorter, as new computer models were introduced one after another with more new applications and programs. This made old recycled computers less attractive. What is more, as the computers almost saturated the market, the competition among the venders heated up, that, in turn, pulled down the selling prices of new computers remarkably. Consequently, Akimine was compelled to further lower its price. Even in developing countries, more people could afford to buy new computers. (see Exhibit A, Computer Market Trend in Japan)

During the initial stage of his venture, the cost of buying old computer was around Yen 6000 (US\$75) and now it is only Yen 300 (US\$3.75).

When Mr. Kobayashi established Akimine in 1999, the average price of brand new computer was Yen 199,000 while the price of his recycled computer was less than Yen 100,000. In 2004, when he opened the new plant in China, the average price of a new computer was 144,000, whereas the price of a recycled one was Yen 70,000. The difference in price between new and recycled computers narrowed, while the quality gap was widening. This market trend made his company's business less and less profitable. The company had no choice but needed to redirect its business strategy.

SHIFT TO LCD TV PRODUCTION

Mr. Kobayashi foresaw that the same thing would happen to the television market, similar to what happened to the computer market. He noted that, sooner or later, consumers would start to dispose old TV as soon as new versions are introduced. In the information technology industry, this was the remarkable transitional period.

When Mr. Kobayashi saw a number of LCD panels discarded, he wondered if he could recycle those panels by attaching new frames. In 2004, the company started research and development on recycled liquid crystal display (LCD) television (see Note 3, “brief history of LCD”).

Computer and television monitors began shifting from cathode-ray tubes (CRT) to liquid crystal display (LCD) panels. In 1984, Seiko-Epson introduced the world first 2.1 Inch color LCD television. In 1998, Sharp introduced the world first 14 inch color LCD television. In 1999, Sharp launched the world first 20 inch LCD television. By 2004, Japanese manufacturers completely shuttered domestic production of CRT TVs.

Mr. Kobayashi and his engineers noticed a major problem with LCD-TV. The panels become difficult to watch because it eventually turned dark after several years.

The company’s engineer team studied the cause of this problem and finally managed to trace the cause. The degradation of the backlight that illuminates the panel has short product life cycle. If the backlight is replaced, the panel can be reused semi-permanently. So, the company attached LCD panel to television device to make it LCD-TV.

Note 3. LCD Brief History

The first LCD-TV display was conceived in May 1968 by George Heilmeyer, inventor and electrical engineer.

In 1988, the first commercial LCD television set measuring 14", was introduced by Sharp Corporation didn't target the mainstream audience. Instead they were used as display and boutique items by businesses.

By 2006, the prices of LCD screens began falling while simultaneously the screen sizes started increasing. Thanks to cheaper prices and a wide array of sizes ranging from convenient 14" displays all the way to living room-ready 42" displays and bigger.

Technically the company succeeded in producing televisions with recycled LCD by September 2005. Next issues were where to produce and whom to sell to. As for the production, the company initially decided to use a subcontractor on an OEM basis. Under the original equipment manufacturer (OEM) contract, Akimine can sell the products with its own brand name. The OEM contract can save initial capital investment and inventory carrying cost. Later on when the volume increased, the company shifted the production to its plant in China.

The remaining issue was whom to sell to. In the domestic market, its brand name is an unknown and there was no way for the company to compete with giant players such as Sony, Panasonic, Sharp, Toshiba and Hitachi.

Mr. Kobayashi thought there would be a market in developing countries. He visited several developing countries to negotiate with purchasing agents in Indonesia, Malaysia, Vietnam, Myanmar and some African countries. In October 2005, Akimine made the first shipment to an African agent.

In 2006, with its success in computer recycling business, the company participated in the superior product supplier contest sponsored by Saitama Prefecture and won the prize. In 2007, the company received an award from Saitama Prefecture as a leading venture company. After receiving the Saitama Prefecture Award and prize as a leading venture company, the brand name, Akimine, became gradually known in the domestic market. The company was the only TV manufacturer in Japan utilizing recycled flat panels

In 2007, the company was invited by Toyoko Inn Group (TIG) to participate in the bidding to deliver a large number of television sets.

TIG is the leading budget hotel mainly catering to the businessmen and families traveling on a tight budget. TIG provides a clean and comfortable stay for about Yen 8,000 (\$100), lower than the rates of upscale hotels. To hold down costs, only essential facilities and services are offered, like vending machines that sell beverages, snacks and daily necessities on each floor of a hotel, to replace hotel room mini-bars and room service. The group was aggressively expanding and adding 30 to 40 hotels each year. At that time, TIG was operating about 300 hotels and each hotel averaged 100 guest rooms, meaning they needed 3,000 to 4,000 new television sets each year.

In 2007, TIG conducted an open bidding for electronic suppliers of television sets. At that time, the average selling price of a 15-inch brand new television set was about Yen 50,000 at regular retail stores and Yen 39,000 at discount stores. The following is the result of open bidding:

Hitachi Yen 28,000

Toshiba Yen 26,000

Akamine Yen 22,000

Akamine won the bid and received an order of 20,000 sets of 15 inch LCD TV, worth Yen 440 million (US\$5.5 million). This news was spread thru media and Akimine's television sets were gradually accepted in the market.

In 2006, the company started selling LCD-TV at large discount stores in Japan. It seemed this new business model worked and Mr. Kobayashi expected steady growth onward. To meet the delivery schedule, it was necessary to set up a large scale production line to replace backlit of LCD panel and re-assembled into television sets. Consequently, the company shifted production from OEM contract to its own Chinese subsidiary.

However in August 2008, when Akimine finished delivering 6,400 sets, TIG cancelled the order with short notice. The reason was that a leading on-demand cable television service company offered 20 inch brand new LCD TV for free, including the installation of the on-demand video/television device.

This proposal to provide free TV sets came from an emerging new digital cable service provider, based on the perceived consumer desire to watch live and pre-recorded programming of their own choice by inserting a coin in box attached to the TV set. At each room, hotel guests insert coins as they watch on hourly basis.

For TIG, it was a "killing two birds with one stone" situation: they save cost of television purchase and attract more hotel guest with on-demand service with larger monitors.

It was impossible for Akimine to duplicate this business model, due to constraints in working capital. Also, to recover the production cost of offering on-demand television and video services, takes more than one year. Only established companies, such as this leading on-demand firm with many bank credit lines, can afford to offer such a scheme.

Mr. Kobayashi recalled this incident that if a local government had a credit enhancement program to provide guaranty for small to medium sized firms, he could have managed to compete with larger venders.

Aside from the TIG cancellation order, Akimine likewise encountered difficulty in collecting sales proceeds from overseas agents, being a neophyte in international trade. The company did not use letter of credit as a form of payment, to save bank handling fees, but instead chose direct remittance from the importers upon delivery of goods.

But after a while, some of the importers delayed their remittance and some did not pay at all, even though they received the shipment. To prevent additional loss, the company reluctantly stopped the export to certain countries.

As the saying in the old proverb goes, “misfortunes never come singly”.

Akimine faced another problem.. In 2002, the Japanese government announced that all television broadcasting systems should shift from analog to digital transmission by 2011 (see Note 4, Analog to Digital, Worldwide Trend). Mr. Kobayashi did not fully realize the negative impact this transition would bring to his business.

In 2003, digital transmission started on an experimental basis in big cities, but gradually expanded to nationwide coverage. In July 2011, the analog broadcasting ended its 58-year era. Japan became the first Asian nation to complete the transition into digital transmission. Japanese consumers were given two options; buying new television sets with digital device or buying digital-to-analog converter to be installed in old TVs. The majority of the consumers preferred to purchase new and larger TVs with preinstalled digital programming. In 2010, the flat TV sales jumped from 13.6 million to 25.2 million sets—an 85% increase over a year ago (see Exhibit B., Annual TV Shipment and Exhibit C., TV Market Shares).

Note 4. Analog to Digital

The switch to digital broadcasting frees up air waves that will later be allocated to mobile-phone operators Japan was followed by the U.S. and Germany in the past three years,. South Korea, U.K. and France are also planning to switch off analog systems to allow for other uses of the radio spectrum (source: Japan’s Ministry of Internal Affairs and Communications).

REDIRECTED LCD PANEL VENTURE

Because of the order cancellation by TIG and the suspended shipment to Africa, the company ended up carrying inventory of more than 10,000 sets of television which were partly work-in-process and partly finished goods by the end of 2008. To follow this transition to digital programming, more than 10,000 television sets in the warehouse have to be modified.

If Akimine were to purchase the converter and install it to each recycled television, it would cost an additional Yen 2,000 to Yen 5,000 for each set. On the other hand, if Akimine were to make the converter, it would require the company to pay a license fee to Aldage Co., Ltd/ estimated at Yen20 million (see Note 5, Aldage Co., Ltd.).

Note 5. ULDAGE Co., Ltd.

ULDAGE Inc., established in 2006, is a joint venture company for the following purposes:

1. promote and administer joint license programs and royalty operation service;
2. collect license fees from digital broadcasting companies and digital device suppliers;
and
3. provide administration services of joint license programs.

Shareholders of ULDAGE Inc are Hitachi, Ltd., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corporation, Sharp Corporation, Sony Corporation, Toshiba Corporation, and Victor Company of Japan, Limited.

(Source : ULDAGE Home Page)

Beside this transition, it is getting more difficult for a small scale company like Akimine to catch up with and compete with other large vendors. In the past few years, the flat television market including LCD, plasma and LED panels has been evolving so rapidly in terms of lowering prices, larger sizes and better quality.

After analyzing all the options, Mr. Kobayashi reluctantly decided to stop marketing the recycled TVs in the domestic market. As a result, Akimine was urged to find a way to sell the remaining inventory and to survive in the LCD business. It was inevitable for Mr. Kobayashi to explore other opportunities other than simply selling recycled LCD televisions.

The niche market Mr. Kobayashi is currently pursuing is the digital signage, a form of electronic display that shows advertising, menus and other information. (see Note 6, “digital signage”).

Digital signage using LCD, LED and Plasma displays can be used in both public and private environments, including public service offices, retail stores, restaurants, hotels, corporate buildings, amongst other locations.

The Digital signage business required various support in the specialized areas, such as hardware, software and content creation. Since each digital signage is to be designed in accordance with customers' specifications, this is a typical high variety low-volume business in which a small vender can fairly compete with big players. In addition, his engineering team researched an application of light-emitting diodes (LED) as a backlight in substitution for cold cathode fluorescent light (CCFL).

An LED monitor uses less power but provides a brighter display with better contrast, a thinner panel, and lesser heat dissipation, while a conventional LCD monitor consumes lesser power, around 70% compared to CCFL.

By using the recycled LCD monitor with LED backlit, the company can offer its digital signage products more than 40% cheaper than its competitors. To make its digital signage business more competitive, the company also developed software which enables a client to change or edit contents from his own personal computer.

To make full use of its name recognition in Saitama Prefecture, it was rather logical for the company to concentrate its marketing efforts in the local market where target clients are shopping malls, bar/restaurant, public offices, medical clinics, etc.

In April 2009, the company was awarded as one of the 300 most active small and medium size manufacturers in Japan by the Small and Medium Enterprise Agency of Ministry of Economy, Trade and Industry. Its continued efforts in reuse of limited resources and innovative application of LCD and LED were the basis for its being chosen.

Akimine's efforts to adjust itself to changing business environment and consumers' preference will continue.

Note 5. Digital Signage

Digital signs are becoming more and more popular among businesses of all sizes while spanning all types of venue. In 1994 especially, the digital signage witnessed different phases, becoming one of the most powerful sources for displaying media information.

Advertisements, and/or messages may be displayed on digital signs with the common goal of delivering targeted messages to specific locations and/or consumers, at specific times.

Since content of a digital signage may be both frequently and easily updated, saving the printing and/or construction costs associated with static signage, and also because of the interactive abilities available through the accompanying employment of such real-world interfaces as embedded touch screens, movement detection and image capture devices, it has won wide acceptance in the marketplace.

Exhibit A.
PC Market Size and Average Price in Japan

Year	No. of PC (,000)	Total Sales (Yen billion)	Average Price (Yen ,000)	Desk/Note Ratio
1995	5,704	139.2	244	66% :34%
1996	7,192	175.1	243	65% :35%
1997	6,851	165.4	241	56% :44%
1998	7,538	1,632.7	217	53% :47%
1999	9,941	1,973.9	199	52% :48%
2000	12,102	2,144.2	177	49% :51%
2001	10,686	1,769.2	166	45% :55%
2002	9,840	1,616.7	164	44% :56%
2003	10,783	1,612.0	149	45% :55%
2004	12,075	1,733.6	144	48% :52%
2005	12,860	1,607.5	125	45% :55%
2006	12,089	1,465.3	121	43% :57%
2007	9,301	1,134.6	122	35% :65%
2008	8,792	975.8	111	32% :68%
2009	9,518	885.8	93	29% :71%
2010	10,438	920.6	88	31% :69%
2011	11,277	866.9	77	29% :71%

Source :Japan Electronics and Information Technology Industries Association

Exhibit B.**Domestic TV Shipment**

Year	Cathode TV	Flat TV		
		Less Than 29 Inch	Over 30 Inch	Total Flat TV
2004	5,754	2,665	340	3,005
2005	3,982	2,683	2,002	4,685
2006	1,856	1,635	4,729	6,364
2007	625	2,434	5,943	8,377
2008	183	3,053	8,850	11,903
2009	37	5,769	7,857	13,626
2010	0	8,031	17,162	25,193
2011	0	7,448	12,381	19,829

Source : Japan Electronics and Information Technology Association

Exhibit C.
TV Market Share in Japan (2011)

Sharp	32.9%
Toshiba	27.8%
Panasonic	18.1\5
Sony	16.5%
Hitachi	6.1%
Mitsubishi	3.8%
LG	0.5%
Others	7.3%

Source: Google, TV Market Share in Japan