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azbil FIELD

Kurashiki-Style ESCO Business

azbil MIND Enhancing Global Production and Expanding the Functions of Production Bases



Special Feature The Rise of a World-Class Craft Whisky

An Amber Glow from the Blessing of Time The Rise of a World-Class Craft Whisky

In 2008, for the first time in 35 years, a new distillery began operations in Japan. Venture Whisky Ltd. founder Ichiro Akuto and his namesake "Ichiro's Malt" have now become internationally recognized among whisky lovers across the globe, yet behind the birth and success of one of the world's most acclaimed whiskies is the hard work and dedication of Akuto and his single-minded focus on whisky making.

400 casks of unblended whisky rescued from disposal and bound for whisky fame

Ichiro Akuto was born into a family that owned a long-established sake brewery that had been in business since the Edo Period (1603–1868). After graduating from university, he started working for a major liquor company, and it was not until he turned 28 that he decided to help in the family's sake business because of a downturn in its business operations.

"The people who worked at our distillery regarded our whisky as being 'too distinctive and rugged.' Despite our own assessment, when we asked various barkeepers to taste our whisky, many of them believed that it was 'unique and interesting.'"

Upon learning that the valuation standard for whisky includes "individuality," Akuto realized the potential of his company's products and became fascinated by the world of whisky.

"Just as a whisky produced in a



Born in 1965. After graduating from Tokyo University of Agriculture, where he majored in Fermentation Science, Akuto began his career working for a major Japanese liquor company before joining his family's sake business in Chichibu, Saitama. Although the family business was sold in 2000, Akuto established Venture Whisky in 2004, aiming to produce his own distinct style of "Chichibu whisky."



small distillery in a faraway country can be found in a bar in Tokyo, the characteristic of whisky is that even if it's on a small scale, if you're able to produce something that is unique and valued, it can be appreciated all around the world."

The business did not recover despite various efforts, and the family reluctantly sold it off to a different company. At that time, Japan was experiencing a slump in domestic whisky sales, and the new owner decide to dispose of 400 casks of unblended whisky if no one would take them. Some of the whisky in those casks had been aged for nearly 20 years.

Akuto prized the casks like his own children, and after struggling fervently to save them, he succeeded in finding a brewery in Fukushima that agreed to store them for him temporarily. Akuto then established Venture Whisky in his hometown of Chichibu, Saitama, to create whisky from these treasured casks. The whisky produced from the casks that were stored at the brewery was introduced to the market, branded as "Ichiro's Malt." Over two years, Akuto personally visited over 2,000 bars in Japan to promote and sell the brand-new bottles himself. Because of his determination and efforts, "Ichiro's Malt" became increasingly well known, and the whisky released in 2005* received the highest score among all others featured in a special article on Japanese whisky published by a UK whisky magazine, which praised its "individuality." The awarding of such an accolade to a yet-unknown brand took the industry by surprise.

Meticulously crafted "Ichiro's Malt" gains world-class recognition

When the unblended whisky inherited from his predecessor gained popularity, Akuto decided to establish a distillery.

"The art of whisky making is a business that must be handed down to future generations. Even if a product is well received, it has no future if it simply sells out, so I began to think about making new whisky myself."

The annual temperature in Chichibu, which sits in a geological basin, varies widely across the seasons, making it ideal for maturing whisky. Furthermore, the local water used in preparation is soft with moderate mineral content, providing the optimal geographical conditions. Additionally, an increasing number of people from the local community offered to help Akuto with his dream of making Chichibu-style craft whisky.

Akuto received training in whisky making at distilleries in Scotland and Karuizawa, where he also learned how to run a distillery.

"The process of making whisky is essentially the same at all distilleries, but the minute differences in methods and equipment at each stage have a big



The "Card Series," in which each bottle is named after a playing card. A set of 54 bottles was sold at auction for 48 million yen.



The inside of the distillery is filled with the aroma of fermentation and is slightly warm from the heat of the distillation still. The blend recipes are created with careful thought to balance the complex flavors and the price while enhancing the quality every year.

impact on the final quality. That's why we put a lot of effort into every single process. I wanted to create a distillery that would preserve the tradition of whisky making by retaining a certain amount of manual labor."

The first whisky to be shipped from the completed Chichibu Distillery was released in 2011. The commemorative "Ichiro's Malt Chichibu the First" was awarded the "Japanese Whisky of the Year" by a specialist US whisky magazine. This signified a spectacular beginning for the distillery. Since then, "Chichibu Whisky Matsuri 2017," released in 2017, has won a "World Whiskies Award," followed by awards in 2018 and 2019 in the blended whisky category. Adding to the accolades, "Ichiro's Malt & Grain" won an award from the same magazine in the blended limited release categories, bringing the total to four consecutive years of "world's best" whiskies.

"Chichibu Whisky" and the dream of 30 years of aging

The entire process of whisky making, from malt milling to bottling, is handled at the Chichibu Distillery. Among the various stages, the most crucial process is blending. Akuto, who is also a blender, checks the taste of a small number of his 13,000 casks of unblended whisky every day and records the characteristics of each cask. Determining the color, aroma, and flavor and then deciding upon a blend recipe is a process that requires expertise and years of training.

"The appeal of whisky is in its af-



Recipient of the World Whiskies Award in various categories. The two bottles in the center received "World's Best" awards.

tertaste and depth. I create blends which leave sensations on the palate no matter how you drink the whisky," says Akuto. His ideal whisky is one that embodies a distinct "Chichibu" style, which is characterized not only by its smoothness but also by its complexity and feel. He describes whisky as being a "blessing of time" that requires not only a long time to mature, but also gradually nurturing by the wooden casks. He adds, "I want to create whiskies that offer luxuriating moments as you savor them, providing a respite from the stress of daily life."

Such is Akuto's goal—to create "100% pure Chichibu whisky." He is also starting to cultivate barley malt with the cooperation of local farmers, and the crop area is steadily expanding. A second distillery began operations in October 2019, with plans to market bottles of whisky aged 10 years. "As a fellow enthusiast, I enjoy drinking whisky. I'm really looking forward to tasting a 30-year-old 'Ichiro's Malt'," said Akuto of his dream.

The information in this article is accurate as of October 2020.



Kurashiki-Style ESCO Business



In Kurashiki, Okayama Prefecture, Azbil is operating an ESCO business, working to repair aging equipment and take energy-saving measures to extend the life of public facilities. Various measures have been implemented in three buildings, such as improving HVAC efficiency, introducing solar power generation, and using a BEMS for central monitoring. In a difficult financial situation, it was possible by utilizing ESCO services to repair aging equipment and to improve energy efficiency, and the same method is now being expanded to other public facilities.

Utilizing a National Treasury Subsidy project and ESCO to repair aging equipment

Kurashiki is located in the southern part of Okayama Prefecture. Facing Japan's Inland Sea, the city is blessed with abundant nature and a mild climate, and has been an important point for maritime traffic in Japan's Inland Sea since olden times. The city has abundant tourist resources throughout the year, including the Bikan district, where the scenery of whitewalled warehouses and townhouses that retain the atmosphere of the Edo period (1603– 1868). Tourists come from Japan and abroad.

Today, local governments nationwide have an urgent need to maintain and manage the infrastructure necessary for daily life in response to the declining population and diversifying needs of residents. Above all, applying countermeasures for the deterioration of public facilities constructed during the period of high economic growth is an extremely urgent matter for local governments. Kurashiki is known for its advanced efforts to address this issue, and the city's Public Property Utilization Office (part of the Planning and Finance Department) has taken the lead in extending the life of facilities that should continue to be used and in optimizing the amount of energy usage.

In 2012, the city decided that equipment renovation in three buildings, Life Park Kurashiki, which is a core facility for the lifelong learning of citizens, the Kurashiki Fire Department Joint Government Building, and the Kojima Fire Department, would be made by utilizing a National Treasury Subsidy project as well as an ESCO business plan.*1 Because of a difficult financial situation, the city decided to focus on countermeasures for aging equipment and achieving greater energy efficiency.

Improved efficiency for HVAC equipment and remote monitoring of three facilities

Kurashiki made a public appeal in December 2012 for an ESCO company to handle this project. The following February, a consortium of four companies, Azbil Corporation, Kuraray Techno Co., Ltd. (which operates and manages buildings and equipment for public facilities such as Kurashiki City Hall), Nippon Dengi Co., Ltd. (which makes automatic control equipment), and Hirogin Lease Co., Ltd. (which does financing), formed an ESCO company and was entrusted with the project that would be the city's first ESCO business. "The project proposal included not only the repair of aging equipment and introduction of automatic control, but also the integrated operation and management of buildings and equipment afterward, and that was rated highly," says Kenji Nakatatsu, General Manager for Installation at Kuraray.

Kurashiki was considering implementing



Azbil's building energy management system and solar power generation system in the central monitoring room of Life Park Kurashiki. In addition to monitoring the operating status of equipment in the building, the system collects data such as energy consumption.





Solar panels installed on the roof of Life Park Kurashiki. The introduction of solar power generation is one of the most attractive features of ESCO business.

Kurashiki Fire Department Joint Government Building (left) and Kojima Fire Department (right) Patrol inspections once a month and remote monitoring are done.

an ESCO project utilizing public subsidies, so it decided to apply for support for a business energy efficiency improvement project^{*2} proposed by Azbil. The project was adopted in May 2014, and construction took place from the fall of 2014 to the end of January 2015. The ESCO service began in April of 2015.

As a central feature of the improvements, Azbil's building energy management system (BEMS) was introduced to Life Park Kurashiki.*³ Various energy-saving measures, such as improving the efficiency of heat source equipment for air conditioning, installing new solar power generation equipment, switching to LED emergency exit signs, and measures against aging were implemented for each building.

At Life Park Kurashiki, three ice storage heat pumps and two absorption hot and chilled water generators had been in constant operation for the air conditioning since the building was completed, but as operation continued, the unit price of gas, which fuels the generators, increased. As a result, increasing energy costs had become a problem. Therefore, on normal days when there were no events in the summer, the generators were stopped, and cooling only was done using only ice heat storage and low-priced nighttime electricity.

"When there was a concern that the temperature inside the building would rise, such as during an event with many visitors, the operator would pay close attention to the situation and, if necessary, turn on an absorption chilled water generator also. But now, with this project, all existing heat pumps and generators have been replaced with five high-efficiency air-cooled heat pump chillers. At present, Azbil's building management system automatically controls the number of those chillers in operation according to the temperature conditions inside the building, achieving optimal operation. Our labor involved in operations has also been greatly reduced," says Masamichi Okahara, the Director of Life Park Kurashiki.

At Life Park Kurashiki, a Kuraray Techno employee is stationed to manage the operation of buildings and equipment, but for the small-scale Kurashiki Fire Department Joint Government Building and Kojima Fire Department, monthly patrols are made by Kuraray Techno.

"All the equipment in the three buildings is remotely monitored with Azbil's comprehensive building management service. Even for the two facilities that are not managed all the time, when something like an equipment malfunction alarm is sent from the local equipment to the central monitoring point, Azbil will notify us and the operator will promptly rush to the site," says Mr. Okahara.

127% of the proposed energy savings achieved, with improvements being extended to other public facilities

As a result of a series of measures, the amount of primary energy savings has far exceeded the figure quoted by Azbil to the city, amounting to 127%. Based on this result, Kurashiki has developed an ESCO business for other public facilities and started providing service. A consortium of four companies, including Azbil and Kuraray Techno, continues to be involved and is achieving results. Moreover, preparations are now underway for the implementation of a third ESCO project.

"Through collaboration in the ESCO business, I could see firsthand Azbil's energy conservation capabilities and know-how. The strengthening of our partnership with Azbil is a major advantage for Kuraray Techno. In the future, we hope to bring both energy efficiency and comfort to the facilities we operate here," says Mr. Nakatatsu.

"Kurashiki is expected to continue working on new ESCO projects in order to accelerate facility management measures. In the future, hand in hand with Azbil, regardless of whether the context is public or private, we hope to meet the customers' needs for energy efficiency and expansion of building equipment or operation and management," says Kuraray's Deputy General Manager Satoshi Akita.

Public Property Utilization Office Finance Department, Kurashiki City Hall

Location
640 Nishinaka Shinden, Kurashiki
Opened
April 2011
Business
Facility management related to public facilities in the city
Kuraray Techno Co., Ltd.
Kuraray Techno Co., Ltd.
Kuraray Techno Co., Ltd. Location 8-1, Kakudacho, Kita-ku, Osaka
Kuraray Techno Co., Ltd. Location 8-1, Kakudacho, Kita-ku, Osaka Opened
Kuraray Techno Co., Ltd. Location 8-1, Kakudacho, Kita-ku, Osaka Opened April 1981

Building maintenance, processing of synthetic fiber and chemicals, sale of daily necessities, miscellaneous goods and foodstuffs, and worker dispatch



Satoshi Akita Building Management Service Department Deputy General Manager for Planning and Development



Kenji Nakatatsu Building Management Service Department General Manager for Installation



Masamichi Okahara Building Management Service Department Life Park Kurashiki Director

glossary

*1 ► ESCO (energy service company) project

A project in which an energy service company guarantees a certain level of energy savings through the provision of comprehensive services for the reduction of energy consumption in a factory or building. There are two types of contract. *Guaranteed savings contract:* The facility owner bears the project costs and the energy service company guarantees the energy savings. *Shared savings contract:* The energy service company bears the project costs and the customer pays a fee for the energy savings and other services.

★ 2 > Support for business energy efficiency improvement projects A subsidy system to help businesses introduce equipment that is recognized as having significance for government policy because it uses advanced technology, is effective for saving energy, or is cost effective, as judged by the Sustainable Open Innovation Initiative (SII), which reviews energy efficiency plans submitted by the business.

★ 3 ▶ Building Energy Management System (BEMS) A system that automates energy efficiency monitoring and control of all energy-consuming equipment in buildings, factories, district heating and cooling plants, etc., and minimizes the energy consumption of all associated buildings.



Enhancing Global Production and Expanding the Functions of Production Bases

Rolling out advanced production technology from the mother factory to bases in Japan and abroad

The azbil Group, with its focus on global business development, is working to develop and strengthen production bases worldwide. At the same time, by positioning Shonan Factory and Fujisawa Technology Center as a "mother factory" for global production, the azbil Group is innovating and standardizing production processes, with emphasis on developing and automating new production technology that incorporates the latest technological advances, in order to establish a system that provides customers with unique azbil Group value in a timely and high-quality manner.

Establishing a production system to support global business development

he azbil Group, with the aim of delivering the value that Azbil Corporation has cultivated in Japan—in terms of technology, products, and services—to a wider range of customers in overseas markets, has been making full-scale efforts to expand its business globally. Accordingly, the Group is gradually developing a global production system and working to make it competitive.

With regard to overseas production bases, Azbil Control Instruments (Dalian) Co., Ltd. (the former Dalian Yamatake Control Instruments Co., Ltd.) was established in Liaoning Province, China, in March of 1994, and began producing air conditioning valves and mechanical switches for the building market. In the past few years, that has been expanded to include industrial valves, valve positioners, and differential pressure / pressure transmitters for the plant and factory markets. Also, in February 2013, Azbil Production (Thailand) Co., Ltd., was founded as a new production base in Southeast Asia. It produces mainly component products such as control devices and sensors/ switches. The result is the current threebase production system in Japan, China, and Thailand.

The azbil Group is not only establishing and expanding overseas production bases, but is also optimizing its global production system, including domestic factories. As part of this effort, the production function of Azbil's Isehara Factory was transferred to nearby Shonan Factory in spring 2019. Originally, Shonan Factory produced automatic control valves, valve positioners, differential pressure / pressure transmitters, liquid level gauges, etc., but now it produces system and component products formerly produced in Isehara.

Under the current production system, products produced both in Japan and overseas include those requiring advanced manufacturing technology, mass produced prod-



Automatic soldering machine for the sensor parts board of differential pressure / pressure transmitters. Al-based image processing judges the quality of the soldering.

ucts such as component products, and high-mix low-volume products that require processing and welding. Products that require more precise and advanced production technology and equipment are produced at Shonan Factory. In the future, by standardizing processes and equipment, improving the level of production control and quality control for high-mix low-volume production, and further expanding the scale of overseas production, the company aims to increase the percentage of overseas production from the current 25% (approximately) to the mid-30% range in about five years. Also, to prepare for a situation where a major disaster shuts down the production of a base, the Group has been establishing a business continuity plan for production that allows the other bases to take over the lost functions.

Taking on the challenge of automating high-mix low-volume production that creates high-value-added products

A zbil's Shonan Factory and Fujisawa Technology Center, which are centers for technology development, are positioned as the "mother factory" in Azbil's global production system. With the challenges of next-generation production in mind, their job is to *create*, *verify*, and *lead*.

Major production bases of the azbil Group



First, while working to establish new production technology that utilizes the latest advances, we are working to *create* production processes that produce high-value-added products unique to Azbil by achieving automatic microassembly processing using advanced digital technology like AI for our microelectromechanical system (MEMS) sensor package, which is a super-small device that integrates mechanical elements with electronic circuits.

Regarding *verify*, we will further strengthen our support for high-mix low-volume production and customized production. Azbil produces more than 7,000 types of control valves and 8,000 types of differential pressure / pressure transmitters (counting all the combinations of optional specifications) so that we can meet the unique needs of our customers in the optimal way. A flexible production line that produces such a large variety of products is indispensable. As this complicates the production process, preventing human error becomes an important issue to ensure quality.

As such, Shonan Factory, in cooperation with Azbil's solution development departments, is establishing an inspection system that utilizes AI and big data to prevent human errors, and is building a system so that production processes that take dozens of steps to go from sensors to the final product can be traced and centrally managed in a database. For processes where human labor and judgments using human know-how have previously been required, AI or Internet of Things (IoT) technology has been utilized to establish an advanced automation system. Manufacturing with thorough quality control has been achieved.

In high-mix low-volume production and also in customized production, we believe it is essential to increase production efficiency and optimize quality, cost, and delivery (QCD) to provide azbil value to our customers. To that end, the standardization of production processes and parts is being undertaken starting from the planning phase, and detailed standardization and optimization are being implemented. This makes it possible, for example, to solder multiple types of products in a flexible production process, or to include a part of a circuit that was not included in the package in the past.

Azbil's mother factory leads in production, logistics, procurement, and human resource development

S honan Factory will *lead* the company in developing its production technology and standardized production processes for the azbil Group's production bases. Standardizing product design and production processes makes it easy to transfer production to overseas bases. The mother factory's role is to lead the company in production management, quality, logistics, and procurement initiatives.

In addition, azbil Group engineers from overseas production bases are dispatched to Shonan Factory or Fujisawa Technology Center for a certain period of training in production technology or production management. This kind of human resource development has been continuously implemented, and many of the employees who were trained are now leaders at the production bases in Dalian, China or Thailand.

Contributing to a sustainable society and continuous company growth

e are also making efforts to contribute to the achievement of a sustainable society. This is because we believe that efforts toward a sustainable society will lead to the continuous growth of our corporate group.

In addition to using IT and AI technology to save energy in the production process itself, we use energy-efficiency design to reduce the amount of material used in products, and also to introduce reusable raw materials and reduce the number of parts. We are also working to reduce the waste material from production processes. Further, since Azbil's sustainability goals were certified as science-based targets,^{*1} we are strengthening our initiatives, including those directed at the supply chain.

In the future, the azbil Group will further optimize its global production system, regardless of whether the base is domestic or overseas, to provide the latest technology, products, and services in a timely and high-quality manner to meet customers' wide variety of needs, and to contribute to the realization of a sustainable society and sustainable business.

*1 ► Science-Based Targets

GHG emission reduction goals that are set based on scientific evidence to keep the global temperature increase below 2 °C compared to pre-industrial levels.

Science Based Targets (SBT) is an organization whose purpose is to encourage companies to set greenhouse (GHG) gas emission reduction goals as a kind of public promise. Companies apply to participate in the Science Based Targets initiative (SBT), and if their targets meet SBT's standards, the targets are certified as "science-based targets."

Keyword Science Based Targets (SBT)



Greenhouse gas emission reduction targets that companies set for themselves and try to achieve in the next 5–15 years. The targets meet the level required by the Paris Agreement adopted in 2015.

Science-based targets for achieving the goals of the 2015 Paris Agreement

The Paris Agreement was adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in 2015. It can be said that the agreement is the successor to the Kyoto Protocol.

The Paris Agreement's goal is to keep global temperature rise this century well below 2 °C above pre-industrial levels, and to strive to limit the temperature increase even further to 1.5 °C. These are evidence-based action goals derived from reports issued by the United Nations Intergovernmental Panel on Climate Change (IPCC), etc.

Science-based targets are GHG emission reduction targets for the next 5–15 years set by companies in order to achieve the Paris Agreement's goals for limiting temperature rise. Each company submits its GHG emission reduction targets to the joint initiative, SBTi,*¹ and if the target meets the

Goals to reduce GHG emissions and keep global temperature increase under 2°c or 1.5°c! They were set to meet the level required by the Paris Agreement in 2015.



guidelines, it is certified as a science-based target.

Initially, the SBTi's certification guideline was to keep the rise below 2 °C. But in 2019, it was revised to "well below 2 °C" with the further goal of limiting increase to 1.5 °C, in accordance with a special report issued by the IPCC in 2018. Companies are supposed to review their targets at least every five years in light of new guidelines.

Science-based targets greatly affect corporate financing

Setting a target is not mandatory, and there are no incentives for achieving a target or penalties for not achieving one. Nevertheless, many companies are working on setting targets. One reason is that institutional investors are paying attention to medium- to long-term environmental measures as an index for evaluating potential investments, and there is a trend to rate companies highly if they actively promote environmental efforts.

One of the turning points is that, in 2017, Japan's Government Pension Investment Fund (GPIF) began taking environmental, social, and governance factors into account when selecting companies for investment. Due to the nature of public pension funds, GPIF evaluates companies from a mediumto long-term perspective. Since climate change countermeasures are medium- to long-term efforts, it can be said that companies that include them in their business plans have a medium- to long-term perspective. Also, in terms of investment in the future, the long-term perspective of environmental measures tends to be appreciated.

GPIF's presence and influence in the investment market is enormous. Today, institutional investors around the world are referring to various environment-related information, including the Carbon Disclosure Project (CDP)*² report, which summarizes corporate environmental measures, and also science-based targets.

Working to reduce GHG emissions across the entire supply chain

In order to set a science-based target, it is necessary to calculate current GHG emissions based on a standard called the GHG Protocol. The key in calculation is to include GHG emissions from the entire supply chain, from material procurement to product disposal, rather than from the company alone.

GHG emissions from the entire supply chain can be categorized into Scope 1 (direct emissions from a business), Scope 2 (indirect emissions from energy use), and Scope 3 (other indirect emissions). For example, burning fuel in a factory falls within Scope 1, and the use of electricity falls within Scope 2. GHG emissions from the procurement and transportation of materials used in factories, as well as the use and disposal of products shipped from factories, are Scope 3.

SBTi created the Scope 3 goals to be ambitious. Since a company's Scope 3 can be regarded as other companies' Scopes 1 and 2, it is expected that efforts by the entire supply chain will lead to the reduction of GHG emissions in society as a whole.

If these efforts become widespread, some companies may call on their business partners to set science-based targets, and some companies may declare that they will not do business with companies that are not doing enough for the environment.

In other words, medium- to long-term environmental measures are important proactive corporate measures that are directly linked to financing and sales.

An initiative of the Science Based Targets (SBT) organization that encourages companies to set goals and commit to reduce greenhouse gas emissions

Cover photo: Myanmar, by Koji Mizutani, Merry Project representative director

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^{*1} SBTi (Science Based Targets initiative)

^{*2} Carbon Disclosure Project (CDP)

A project in which institutional investors collaborate to require companies to disclose their strategies for climate change and the amount of their greenhouse gas emissions