

Our Special Guides for Foreign Dignitaries Delve a Little Deeper into Japan's Attractions!

Japan, A Vending-Machine Paradise



When I show visitors from overseas around, Japan's vending machines frequently become a subject of conversation. There are a large number of vending machines in Japan offering an abundant range of items, and many of them are outdoors as well. They can be seen not only in urban areas but in the countryside too, and they work

properly. Breakdowns are uncommon. They are well maintained. In other countries vending machines accept only certain coins, like 25-cent coins, but in Japan you can use not only a variety of coins but also banknotes and IC cards. Foreign visitors are amazed that Japan's vending machines return change properly, and they are really astonished that the same machine can dispense both hot and cold drinks. And so on and so forth.

Many unconventional items are sold by vending machines as well. They offer not only drinks and food but also hats, umbrellas, flowers, and even, believe it or not, gold coins and wedding ring kits. Technology, such as AI-equipped vending machines and energy saving, is progressing in leaps and bounds, so there is certainly no shortage of topics.



Compared with other countries, the diffusion rate of vending

machines is high in Japan. According to the Japan Vending System Manufacturers Association (JVMA), there were 2,254,400 beverage vending machines in Japan at the end of 2021. In terms of the number of machines, Japan ranks second in the world behind the United States. But in terms of ratio to population, Japan comes first. I asked JVMA Director General Motozo Tsunekawa about the state of vending machines in Japan today.



The JVMA is the only organization in Japan representing the manufacturers of machines using the Japanese currency. It comprises makers of not only general beverage and food vending machines but also automated teller machines (ATMs) in banks, ticket machines in car parks and elsewhere, machines selling restaurant meal tickets and train tickets, automatic checkout machines in hotels, and so on. “In 2024 there will be new banknotes in Japan,” Mr. Tsunekawa explained. “When banknotes change, the JVMA serves as an intermediary with the government. After consultations with member companies, we make sure that machines can respond when new coins and banknotes are issued. That is one of our major roles.”

Vending machines have a long history going way back to ancient Egypt before the Christian era. The world’s first vending machine was the holy-water dispenser described in a book titled *Pneumatica* by the ancient Egyptian scientist Heron of Alexandria. In this dispenser, the weight of an inserted coin caused water to flow out. It is said to have been placed in temples around 215 BC. “Searching the history of the modern vending machine on the Internet,” Mr. Tsunekawa said, “it seems to have started in Britain. But the full-scale diffusion of vending machines in Japan came from the United States. In particular, the ball started rolling when the US company Coca-Cola launched sales in Japan using vending machines as its tool.” A video of the history of vending machines in Japan (in Japanese) can be seen on the JVMA’s website at www.jvma.or.jp.

“Japan’s vending machine makers,” Mr. Tsunekawa explained, “not only manufactured the machines but also created operating companies to refill and otherwise look after them. The vending machine business would definitely not succeed with the manufacturing of machines alone. Because makers realized that the business would not go well unless machines were operated in a proper and standard manner, the job of operator emerged. These days affiliated operators of beverage makers undertake the replenishment of products and collection of money, but in fact this route was firmly established in Japan right from the start of vending machines.” In this way, beverage vending machines in Japan were properly refilled and maintained, and they spread throughout the country.

“Japan is probably the only nation in the world where vending machines are still placed outdoors,” Mr. Tsunekawa went on. “Several decades ago machines were set up outdoors in other countries too, but in most cases they have been moved indoors due to problems concerning crime prevention and scenery. So it has become very unusual to see a country

where vending machines stand outdoors. The reason is that Japan is such a safe and orderly country.”

As well as the sight of outdoor vending machines, foreign visitors to Japan are amazed that you can buy both hot and cold drinks from the same machine. “The availability of both hot and cold drinks is another frequent subject,” Mr. Tsunekawa told me. “It is because



Japan has four distinct seasons that machines have this hot-and-cold function. Since cold drinks would not sell in outdoor vending machines during the cold Japanese winter, vending machines selling both hot and cold drinks throughout the year appeared.”

Although vending machines thus spread on a nationwide scale in Japan, in recent years their number has declined from the peak. “In the age when we did not have convenience stores,” Mr. Tsunekawa noted, “vending machines were a tool by which beverage makers sold their products. When convenience stores began to appear, people started to go there to buy their drinks, because they knew that convenience stores stocked popular items. And there was a labor shortage problem too. Refilling outdoor machines is a tough job in the sweltering summer heat, and it became difficult to get people to do that kind of work. Vending machines with good sales are okay, but vending machines with poor sales are going to be removed.” Another reason for the drop in the number of vending machines is that it became possible to drink cheap and tasty coffee in convenience stores.



There are also new developments, though. Mr. Tsunekawa explained, “Eating and drinking establishments were unable to open during the COVID-19 pandemic, so places like ramen restaurants placed vending machines in front of their restaurants and sold gyoza and ramen from them. It is a fact that this move has led to a review of vending machines. The number of beverage vending machines is not increasing, but going forward, I think that vending machines offering food, and in particular frozen food, which you can take home, defrost, and then eat, are going to spread.”

Indeed, at the end of December 2021 the number of food vending machines had risen over the previous year. Recently there has been an increase in the number of novel vending machines attracting much attention. In stark contrast to the past, makers are seeking to arouse curiosity by setting up only limited numbers of vending machines offering unusual goods or items that are difficult to obtain elsewhere. And there seems to have been an increase in the number of people going in search of such machines.

Creating even better machines with existing technology

Mr. Tsunekawa added, “Recently the number of frozen-food vending machines has increased, hasn’t it? But there were ice-cream vending machines before, so actually these are nothing new, just a development of existing technology. They might seem new to ordinary folk, but seen from the manufacturing side, there is not much change at all. It’s only the vending-machine structure that has changed.”

Among frozen-food vending machines, the Dohiemon is enjoying a real boom at present. This Dohiemon vending machine offers the taste of popular restaurants across the nation in the form of frozen-food products. Several steps are taken to maintain freshness, which is so crucial for frozen food. The frozen food is cooled to the business warehouse level of minus 25 degrees Celsius. Moreover, if a condition warmer than minus 15 degrees continues within the machine for 90 minutes, an alarm is sent and sales from the machine automatically cease. Items have gained a good reputation for their close reproduction of the original taste. They might be rather expensive compared with usual vending machine prices, but they are definitely worth it. Remember, you can get the taste of popular restaurants nationwide anytime, 24/7/365.



In addition, in May 2022 a demonstration test was conducted of a vending machine selling medicine, with a video-call link to a pharmacist. “The forerunner here was the cigarette vending machine,” Mr. Tsunekawa explained. “Only adults can buy cigarettes. What people do now is purchase from a vending machine after scanning an IC card called Taspo. But before that, there was a cigarette vending machine with a video camera that displayed the face of a person wanting to buy cigarettes from the vending machine. A person in the store looked at the face to check that the person was 20 years old or over

before allowing the transaction to commence. So the idea of selling medicine after connecting the inside of the drugstore with the outside by video is nothing new.” At pharmacies or drugstores, ordinary medicine cannot be purchased unless there is a pharmacist or registered medicine seller present. In the demonstration test, using a special terminal, the pharmacist or registered seller at the pharmacy operating the test vending machine checked the purchase content each time and approved the sale.

Japan's proud technology



“Both hot and cold drinks can be sold in the same vending machine because a heat pump is used,” Mr. Tsunekawa commented. “With little energy injected, the heat-pump technique sucks in heat from the air and so on and uses it as substantial thermal energy. The heat

pump is widely used in such devices as air conditioners, refrigerators, and EcoCute water heater systems.”

At present energy saving is a major initiative too. In just 20 years from 1991, the amount of electricity used by a single beverage vending machine fell by as much as 70%. How was such a massive reduction achieved? Mr. Tsunekawa cited the following main technologies:

- (1) Smart energy saving (A built-in microcomputer in the vending machine analyzes sales and other data and, in accordance with the results, automatically and appropriately enforces zone cooling and other energy-saving functions.)
- (2) Heat pump (The heat pump reuses heat emitted from cooling devices in the machine to warm hot products. Thanks to this method, electricity consumption is greatly reduced.)
- (3) Automatic lighting and dimming (By means of a sensor, lighting is turned on when it gets dark and off when it gets light. This eliminates the wasteful use of electricity and curbs the amount of electricity consumed. Recently LED lighting, which consumes less electricity, has begun to be used too.)
- (4) Zone cooling (Electricity consumption is curbed by cooling or heating only products that are soon to be sold by means of a partial cooling and heating system.)
- (5) Peak shaving (The suspension of cooling operations on summer afternoons, when electricity use is at its highest, reduces the burden of power generation plants and curbs

the emission of carbon dioxide in generation.)

(6) Use of vacuum insulated material (The key to energy saving in vending machines lies in enhancing energy efficiency so that, as far as possible, cool air and hot air cannot escape from the machine. Recently, therefore, vacuum insulated material, which increases temperature-retaining efficiency, has come to be used in beverage vending machines.)

“One more thing,” Mr. Tsunekawa added. “Money inserted into Japanese vending machines is rarely rejected. They really are top-class in the world in this respect. We are proud of the fact that this technique of accepting and identifying money is so advanced and outstanding.”

What kind of vending machines are unique to Japan?

Disaster-response vending machines

In Japan, which suffers from many earthquakes, typhoons, and other natural disasters, there is a so-called disaster-response vending machine. “In the case of a disaster-response vending machine,” Mr. Tsunekawa said, “a local government, such as Shinjuku, and a beverage maker conclude a disaster agreement. In the event of a disaster surpassing a certain level, vending machines set up in public places, such as municipal gymnasiums, can be opened to supply drinking water. Water can be distributed free of charge as well. At the time of a major disaster, naturally there would be no electricity. But some of these vending machines have their own generators, so at such times they could generate power themselves and turn on the electricity.” An initiative has also started whereby vending machines with electric bulletin boards can transmit information at times of disaster, such as alerts and evacuation instructions.

Guardian vending machines

Although Japan is considered a relatively safe country, the light of vending machines also plays a role in preventing crime on dark nighttime streets. “Vending machines are, in a sense, everywhere,” Mr. Tsunekawa said, “and since they have power sources, security cameras can be attached to them. So they can be used to protect children too.” Furthermore, look closely, and you will notice that many vending machines display address plates, which would be useful in the event of having to call the police or an ambulance.



← There are compact and slender vending machines like these too.

Planned vending machine for duty-free goods

“Until now foreign visitors could only purchase duty-free goods face-to-face over the counter,” Mr. Tsunekawa said. “But the Japan Tourism Agency and National Tax Agency have revised the system with the aim of promoting the recovery of inbound demand. There are several conditions. For example, the vending machine must be able to read a passport and to carry out face recognition to check that the passport photo and user are the same person. If the vending machine meets these conditions, it can handle duty-free goods.” If such a system could be realized, for instance, rural places that have difficulty catering to

foreign languages could make use of it. At present, vending machines where people can pick up duty-free goods reserved beforehand on a dedicated website are beginning to appear at places like Haneda Airport and Narita Airport.

Recent buzzworthy vending machines

Finally, let me introduce a couple of places in Tokyo where you can find highly unusual vending machines that have been in the news lately (as of February 2023).

Trendy Shibuya



A cake vending machine on the third floor of the Adores building sells cakes in transparent cans made by the Okashi Gaku patisserie. One of the reasons for their eye-catching popularity is that the cakes look so beautiful.

Next to this vending machine there is another machine that makes cotton candy on the spot!





The Salad Stand vending machine is located just outside the ticket gates of Shibuya Station on the Keio Inokashira Line. Even if you don't have time to go to a convenience store, you can buy fresh salad and cold-pressed juice here.

The Namakuri fresh cream vending machine is located by the escalator on the 2F basement of

Shibuya 109, a popular magnet for girls. The cans contain 90% fresh cream and 10% sponge cake! They come with a spoon attached, so you can eat the delicacy straightaway.



Outside the entrance to the Village Vanguard building, which is directly connected to Shibuya Station on the Tokyo Metro Hanzomon Line and Tokyu Denentoshi Line, there is a banana vending machine. Set up in 2010, this was the first vending machine in Japan selling Dole bananas. The temperature inside the machine is kept at just the right level to preserve the bananas. At present it sells greenish ripened bananas that contain a lot of resistant starch.

You can also buy edible insects, which have been in the news a lot recently, from a vending machine. The place to go is the Don Quijote Shibuya store, on the Shibuya Center-Gai street side. The packaging is simple and (perhaps too?) easy to understand. Maybe not for the fainthearted, but if you have the nerve, go ahead and try!





Inside the Truffle Gallery in Shibuya 2-chome there is the world's first vending machine emitting the fragrance of truffle! Truffle-related products can be purchased from this machine, including sea salt with truffle and truffle soy sauce. It is located in the showroom. After pressing the purchase button and finishing payment, you can enjoy the scent of truffle too.



Unusual vending machines at Haneda Airport

There are many unconventional vending machines in Terminal 2 (domestic flights) at Haneda Airport, including machines offering pop-up sweets, worldwide inflight meals,



and popular regional curries. If you have forgotten to buy some souvenirs, don't worry! You can purchase souvenirs from all over the place from these vending machines.

You will find the much-talked-about orange juice vending machine here too. Just insert the money, and it squeezes the orange juice for you while you wait.

In addition, in the monorail station for Terminal 3 (international flights) there is the vending machine, mentioned above, where you can pick up duty-free goods reserved beforehand on a dedicated website. Since reservations can be made in advance, you don't have to waste time shopping for duty-free goods or tire yourself carrying them to the airport. You can spend more time sightseeing!



We usually see vending machines around us without thinking much about them, but it's really amazing how much they have evolved. I have a feeling it is the Japanese artisan spirit of making existing things even better, and the Japanese feeling of hospitality, that have led to this development of vending machines in a very original direction. As technology progresses, apparently there are people who make pilgrimages out into the provinces in search of nostalgic old vending machines. Once again, I sense here the Japanese people's affection for these machines.



Vending machines are deeply rooted in Japanese life. How about going out and looking for some unconventional ones?

Cooperation:

Japan Vending System Manufacturers Association

www.jvma.or.jp (Japanese site only)