

We Are *Tomodachi*

Spring / Summer 2017



The Government of Japan




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Website

JapanGov (<http://www.japan.go.jp>), the official web portal of the Government of Japan, features video and other content to bring you up to date on various initiatives, such as the Abenomics program to revive Japan's economy, womenomics measures to unleash the power of women, and the country's international contributions. The website also carries publications including "We are *Tomodachi*" going back to the Winter 2013 edition.

"We Are Tomodachi" New

The "We Are *Tomodachi*" website has been completely renovated and made easier to view. To facilitate in-site navigation, the contents are now searchable by category, such as "Featured Articles" and "Friends of Japan," and by topic country, as well as by year.




Regional Revitalization New

We have also added a new page on regional revitalization. This page shows the diverse attractions of each regional area, as a destination for investment and tourism, through a variety of videos. We invite you to discover the area that most appeals to you.



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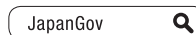
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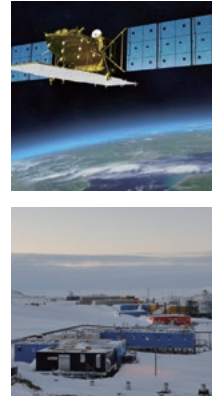
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Cover: Prime Minister Shinzo Abe visited Rome, Italy, and held a meeting with Prime Minister Paolo Gentiloni in March 2017. Prime Minister Abe, chair of last year’s G7 Summit, promised his full support to Prime Minister Gentiloni, this year’s chair, in promoting the success of the upcoming G7 Taormina Summit.

“We Are *Tomodachi*” is a magazine published with the aim of further deepening people’s understanding of the initiatives of the Government of Japan and the charms of Japan. The magazine’s title, “We Are *Tomodachi*” means “We Are Friends,” expressing that Japan is a friend of the countries of the world, one that will cooperate and grow together with them.

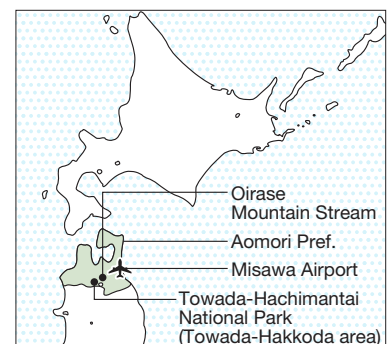
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Glimpses of Japan's Wilderness and Old Roads



Oirase Mountain Stream: Aomori Prefecture

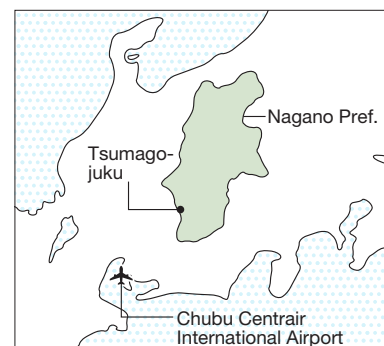
Aomori Prefecture is at the northern tip of Honshu, the largest of Japan's four major islands. Here you can find a section of the Towada-Hachimantai National Park, rich in scenes of natural splendor, such as the beautiful Oirase Mountain Stream (Oirase Keiryu). The appearance of the area changes day by day and is especially beautiful from late spring to early summer, when the leaves are fresh and green. Along its 14 kilometers (around nine miles), the mountain stream also offers a wide range of aspects—some precipitous and some peaceful. While hiking or cycling along the river trail, you can spot a dozen waterfalls and even wild Japanese serows (*Nihon kamoshika*). Looking for some time away from city life in the concrete jungle? Oirase—just two and a half hours by plane and car from Tokyo's Haneda Airport—will give you a truly refreshing experience.





Tsumago-juku: Nagano Prefecture

Tsumago-juku is located at the southern end of Nagano Prefecture, the geographic center of the Japanese archipelago; it is about a two-hour drive from Chubu Centrair International Airport near Nagoya. Early in the seventeenth century the Nakasendo was completed as a route connecting the shogun's capital of Edo (today's Tokyo) with Kyoto, the imperial capital. Post towns developed at 69 locations along the route with facilities to provide food and lodgings for travelers on foot. Of these, Tsumago-juku was the 42nd counting from Edo. Toson Shimazaki (1872–1943), a renowned Japanese poet and novelist, was from this area; he was born in Magome-juku, the 43rd post town on the route, nine kilometers (five and a half miles) from here. Tsumago-juku preserves its traditional appearance, and many of its historical buildings are still in use as inns or restaurants. It attracts many domestic and international visitors, who can directly experience sights and scenes redolent of centuries past as they hike or stroll around the area.



Creating a “Hydrogen Society” to Protect the Global Environment

The 2015 Paris Agreement was a historical pact in terms of promoting the creation of a carbon-neutral society. Efforts had been underway to lower carbon output, but this agreement set a goal of reaching net-zero emissions of greenhouse gases in the second half of the current century, thus achieving a carbon-neutral world.

Tokyo Institute of Technology Professor Takao Kashiwagi declares that use of hydrogen is the key to a carbon-neutral world. “Hydrogen energy emits no carbon dioxide when used. The hydrogen that serves as the energy source is currently produced mainly by reforming fossil fuels like natural gas, and this process results in the emission of carbon dioxide. But in the future it will become possible to greatly reduce the volume of these emissions by combining the process with technologies such as underground storage of carbon dioxide and the growing of tiny algae to produce biofuel. And in the future it will become a zero-emission energy source when produced using solar and other types of renewable energy.”

Another advantage of hydrogen is that when used in fuel cells to generate electricity directly through electrochemical reactions between the hydrogen in them and oxygen drawn from the air, the generation process is more efficient than the conventional system of thermal power generation, converting the chemical energy of fuels into thermal energy to turn turbines and thereby generate electricity. Furthermore, since the heat generated from the reactions can be used for other purposes, extremely high overall energy efficiency can be achieved. The Toyota Mirai hydrogen fuel cell vehicle can travel 700 kilometers (435 miles) on a full tank, and recently introduced fuel cell buses can travel more than 200 kilometers (124 miles). An electric vehicle would require a large battery to travel similar distances, leading to potential safety issues.

As Professor Kashiwagi explains: “Use of hydrogen can contribute greatly to saving energy and reducing the burden on the environment. In addition, hydrogen fuel can be made from a wide variety of materials, including forms of energy that are currently unused, such as by-product hydrogen and accessory gases from crude oil. So it can serve greatly to enhance energy security for resource-poor countries like Japan, and if the use of this equitable form of energy spreads around the world, other countries that lack resources can aim for similarly affluent futures.”

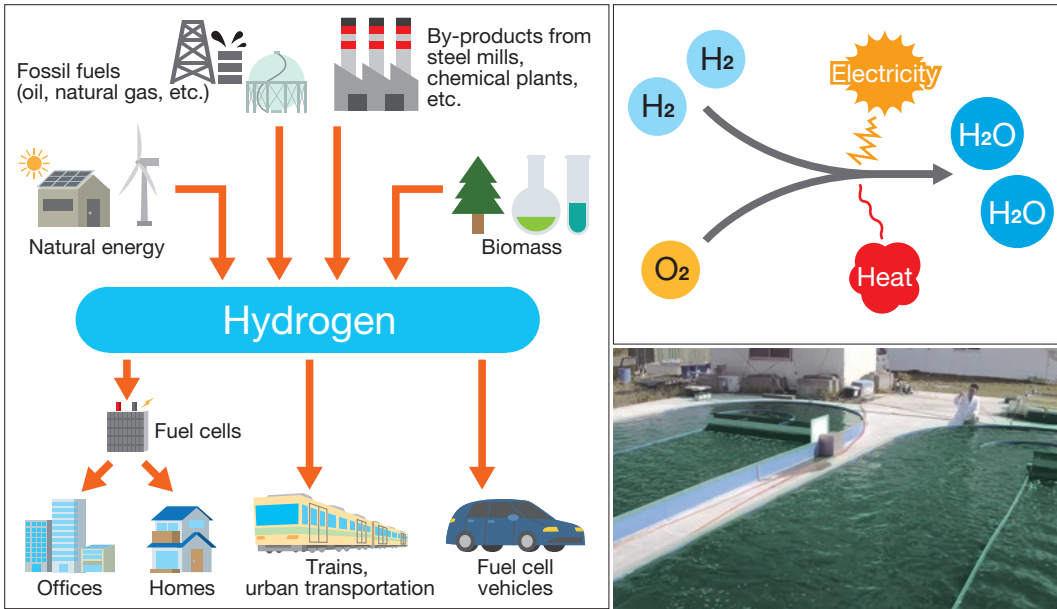
A major issue to be addressed is the need to establish systems for mass production and transport. The government and industry are working in tandem to build a social model for introduction of such systems in Fukushima Prefecture, where reconstruction efforts are underway in the wake of the Great East Japan Earthquake. During the 2020 Tokyo Olympics and Paralympics Japan hopes to showcase these initiatives to the world by transporting large amounts of Fukushima-produced hydrogen to Tokyo and putting the spotlight on Japan’s hydrogen-society infrastructure.

Professor Kashiwagi says, “We’re aiming to provide a model for the rest of the world through combined government-industry efforts. Japan has prospered by taking risks in commercialization. This is our country’s tradition and its strength. I hope that in the future we can undertake international coordination, teaming up with Europe and America to tap our respective strengths and promote standardization.”



©Iwatani Corporation

The Mirai, marketed by Toyota Motor in 2014 as the world’s first mass-produced hydrogen fuel cell vehicle.



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1. Hydrogen can be produced using a variety of energy sources, including fossil fuels such as oil and natural gas, modification of methanol and methane gas from biomass, and electrolysis of water with wind and solar power. It thus can provide a steady supply of energy. 2. Electricity and heat are generated when hydrogen and oxygen combine to become water. 3. Technology for the mass culture of *Euglena*, tiny algae that can be used for biofuel, has been established in Japan. One way of reducing the amount of carbon dioxide released in the process of making hydrogen is by using algae and other photosynthetic plants to absorb it. Unlike other plants used to produce biofuel, the mass culture of *Euglena* does not require large areas of land. Oil can be extracted from mass-cultured *Euglena* and used as a biofuel.



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4. Since March 2017 Tokyo Metropolitan Government has been operating two commercially sold fuel-cell buses on regular routes. 5. "Ene-Farm" was put on the market in Japan in 2009 as the world's first fuel cell for home use. Being small and capable of producing hydrogen, it can be used to generate power for a single home. This results in improved efficiency, since the electricity does not need to be transmitted from a power station. (Note: The photo is illustrative, it does not show an actual installation.)

Takao Kashiwagi

Distinguished Professor and Emeritus Professor, Tokyo Institute of Technology; Director, International Research Center of Advanced Energy Systems for Sustainability. A leading figure in the fields of the environment and energy, who has been deeply involved in Japan's energy policies for many years. Has served as head of the working group on new energy sources in the Advisory Committee for Natural Resources and Energy and in many other capacities, such as the chairman of the Japan Institute of Energy and a member of the Science Council of Japan.



Satellite Radar Technology Helps Protect Forests

The long-term rise in atmospheric and ocean temperatures has become a serious issue, triggering climate changes over the entire earth. One of the causes of global warming is the increase in carbon dioxide (CO₂) emissions, of which forest logging and other changes in land use account for about 11% of the global total. “Stopping unplanned and illegal logging in tropical forests is also crucial as a measure against climate change,” says Kanako Adachi of the Japan International Cooperation Agency (JICA).

Japan has been playing a leading role in creating a new international framework to reduce CO₂ through the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP), and Brazil requested its assistance in dealing with the problem of illegal logging in the Amazon basin.

In response to this request, JICA and the Japan Aerospace Exploration Agency (JAXA) conducted a project from 2009 through 2012 to preserve the Amazon’s forests and prevent illegal logging using observational data from the Advanced Land Observing Satellite *Daichi* (ALOS). Before that Brazil had monitored its forests using satellite-borne optical sensors, but the cloud that covers the Amazon basin for more than five months of the year limited the system’s effectiveness. The JICA-JAXA project, in contrast, used radar employing microwaves from ALOS. This system was able to monitor the earth’s surface even when it was covered with clouds or during the night. JICA and JAXA did not limit their role to providing data; they also sent four experts from Japan to develop software to analyze logging areas from satellite images. They then trained local personnel in this technology, building a system so that monitoring of changes in forests using ALOS could be done with local efforts only. This combination of Japanese assistance and local efforts proved effective, detecting more than 2,000 illegal logging operations and decreasing the area being illegally logged by 40%.

As Adachi explains, “JICA then collaborated with JAXA to launch a new project, the JICA-JAXA Forest Early Warning System in the Tropics [JJ-FAST], which uses this system to constantly monitor tropical forests around the globe with *Daichi-2* [ALOS-2], the successor to ALOS. It’s revolutionary in that changes detected in the forests can be viewed by anyone on the Web free of charge.”

The first data to be released under this project was that for five Latin American countries in November 2016. The target areas will be expanded in stages to African and Asian regions. Ultimately, the aim is to make data publicly available for about 80 countries that have tropical forests.

“At the 2015 United Nations Climate Change Conference [COP 21] in Paris, the Japanese government announced that it would undertake the Forest Governance Initiative, and JJ-FAST is at the core of this effort,” says Adachi. “We hope we can keep contributing to the protection of people’s livelihoods through the use of Japanese technology in solving problems on a global scale.”




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ALOS-2 is used in a wide range of fields including map-making and regional observations, assessment of disaster situations, and resource exploration.

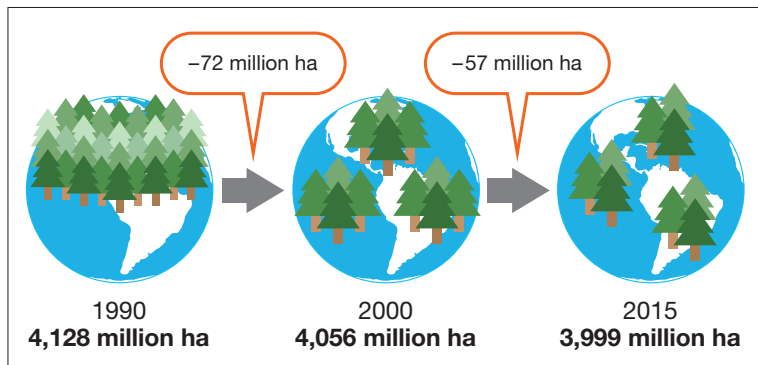
JICA-JAXA Forest Early Warning System in the Tropics: JJ-FAST

<http://www.eorc.jaxa.jp/jjfast>



Protecting the Amazon Forest with Japanese Technology in Brazil <https://youtu.be/ZXefT9Wr1Y>

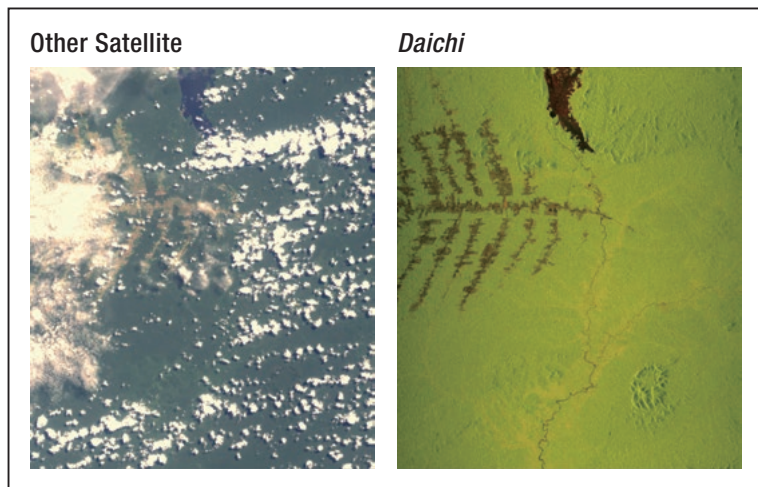
Changes in the world's forested land (hectares)



Source: Global Forest Resources Assessments.



©RESTEC



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1. Thanks in part to cooperative international efforts, the pace of the decrease in the world's forested land area has been slowing, but considerable amounts of forest area continue to be lost every year.
2. Site photo of forest logging in the Amazon region discovered by *Daichi*. The loss of tree cover makes land susceptible to floods and soil erosion, impacting people's lives.
3. Two satellite images of the same region: The image on the right, taken from *Daichi* using synthetic aperture radar, shows the surface underneath the clouds.

JICA-JAXA Forest Early Warning System in the Tropics (JJ-FAST)



Website of the JICA-JAXA Forest Early Warning System in the Tropics, which releases information on the status of logging and changes in the world's tropical forests about once every six weeks on average. Areas where forest decreases are seen are indicated on the map with balloons, which can be clicked on to enlarge the map and display more detailed data, such as the size of the logged area.

Courtesy of JICA/JAXA



Kanako Adachi

Inaugural project officer of the Project on Utilization of ALOS Images to Support Protection of the Brazilian Amazon Forest and Combat against Illegal Deforestation. Currently oversees the JICA-JAXA Forest Governance Initiative as director, Natural Environment Team 2, Forestry and Nature Conservation Group, Global Environment Department, JICA.

Antarctic Observation: Predicting Global Environmental Changes

Celebrating its 60th anniversary in 2017, Syowa Station was built in 1957 during the International Geophysical Year as the research station for Japan's Antarctic observation activities. Japan is one of the 12 original signatories of the Antarctic Treaty, which prescribes the use of the Antarctic region for peaceful purposes, and has been a world leader in polar research. "The construction of Syowa Station came about with the passionate support of scientists seeking to push forward the frontiers of geoscience and of the public, who looked to it as a symbol of Japan's post-World War II recovery," recalls Dr. Kazuyuki Shiraishi, director-general of the National Institute of Polar Research. "The project took off with little more data than a few aerial photographs. What's more, *Soya*, Japan's first icebreaker for Antarctic expeditions, had less horsepower than those of other countries, and the planned construction site was not in an easily accessible location. The first expeditions faced one struggle after another.

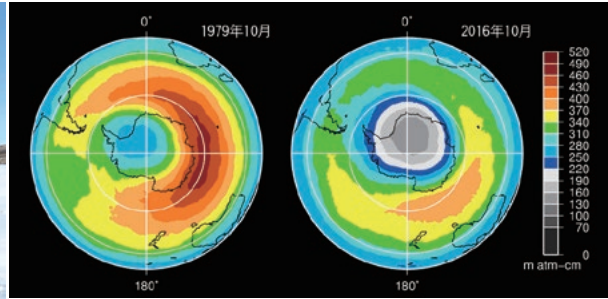


Syowa Station is located on East Ongul Island in Lützow-Holm Bay, four kilometers (2.5 miles) from the Antarctic ice edge. Japanese Antarctic Research Expedition summer and winter teams based here conduct research and observation year-round. The station initially consisted of only four buildings, but today the facilities have increased to about 70 structures of various sizes, with a total floor space of more than 7,000 square meters (75,000 square feet).

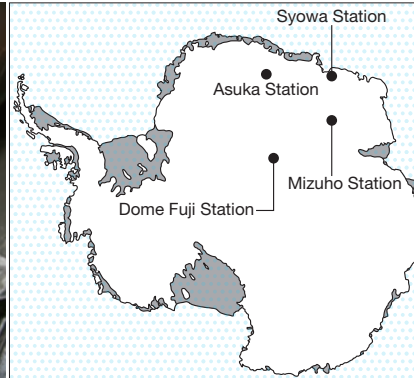
"Japanese researchers patiently continued to compile data in the extreme polar environment." One of Japan's greatest achievements in Antarctic research is the discovery of the ozone hole. "Japan began observing the ozone layer in 1961," Dr. Shiraishi says. Twenty-one years later, in 1982, members of the expedition team at Syowa Station discovered that the total volume of ozone over Antarctica from September to October that year was abnormally low compared to 1981 and earlier. Their findings, pointing to the existence of a hole in the ozone layer, were presented for the first time at a 1983 symposium in Japan. "The presentation became the focus of worldwide attention as subsequent research revealed the association of chlorofluorocarbons with the destruction of the ozone layer," Dr. Shiraishi notes. "There is no question that Japan's discovery helped accelerate international initiatives to protect the ozone layer, including the Montreal Protocol on Substances That Deplete the Ozone Layer," which entered into force in 1989.

Research in Antarctica has contributed many valuable clues to understanding the environment on and around the Earth. In 1969, nine meteorites were found around the mountainous areas of the continent's interior, and since then as many as 17,000 pieces of meteorites have been collected. The mineral texture and chemical composition of some of them suggest that they are Martian or lunar in origin. These specimens have been loaned out to researchers around the world, significantly contributing to advances in planetary science. Recent years have also seen progress in research on the thick ice sheet covering the Antarctic continent. Dr. Shiraishi explains: "Through detailed analysis of the ice that we bored from the ice sheet to a depth of 3,000 meters [9,800 feet], along with the gases and volcanic ash that it contains, we have ascertained details of the periodicity of climate shifts going back around 720,000 years. And by analyzing changes in the Earth's environment from the past, we aim to be able to produce accurate forecasts of the future."

The Antarctic Treaty is a symbol of international peace, and its importance continues to grow. "Antarctica belongs to no country and has no borders thanks to the Antarctic Treaty, making it an ideal ground for international cooperation," Dr. Shiraishi says. "Coordinating with the observation stations of other countries, we will continue to work toward unraveling the mechanisms of climate change and global warming."



Source: Japan Meteorological Agency maps of total ozone distribution as of October from 1979 through 2016 (http://www.data.jma.go.jp/gmd/env/ozonehp/link_hole_monthhave.html) with the addition of dates and other text.



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1. Observation of the ozone layer combines several methods: measuring ozone levels at different altitudes using small weather balloons, gauging the total volume of atmospheric ozone from the ground, and observing the ozone layer using satellites. Japan began ozone measurements in 1961. 2. Average total ozone volume in October 1979 and October 2016 (created by the Japan Meteorological Agency based on satellite data provided by the U.S. National Aeronautics and Space Administration [NASA]). The colors represent ozone thickness: the lower the color in the bar at right, the thinner the ozone layer. Though the ozone hole is tending to shrink gradually, a complete recovery will take some more time. Forecasts based on numerical models suggest that ozone volume will return to 1980 levels from the middle of the twenty-first century onward. 3. In 2007 an expedition team succeeded in drilling vertically into the ice sheet and retrieving a cylindrical ice core at Dome Fuji Station, about 1,000 kilometers (620 miles) inland from Syowa Station. Measuring roughly 12 centimeters (4.7 inches) in diameter and 3,000 meters (9,800 feet) in length, the column of ice has yielded valuable samples for understanding climate changes over the past 720,000 years. 4. There are four Japanese observation stations in Antarctica.

Major achievements of Japan's base for Antarctic observation

Achievement	Year	Notes
Discovery of meteorites in Antarctica	1969–	About 17,000 meteorites have been found, including precious meteorites of Martian and lunar origin. This has contributed both to the elucidation of the meteorite concentration mechanism, which is closely related to the flow of ice sheets and position of mountain ranges, and to the discovery of large numbers of meteorites by research expeditions from other countries.
Aurora research	1970–	An aurora observation rocket test facility was set up at Syowa Station, and over about 20 years starting in 1970 a total of 58 rockets were launched into the middle and upper atmosphere where the aurora appears. This contributed to studies of the physical properties of the aurora and understanding of the mechanism by which it occurs.
Discovery of ozone hole	1982	First discovery of an area over Antarctica where the volume of ozone was extremely low. This led to initiatives to protect the ozone layer, including adoption of the Vienna Convention in 1985 and the Montreal Protocol in 1989.
Discovery of moss pillars	1995–	"Moss pillars," which are aggregates of mosses and algae, were discovered on a lake bottom near Syowa Station in 1995. Learning the structure and function of moss pillar ecosystems may be useful in understanding the stability and restorability of the earth's ecosystem overall, including humans.
Ice core research	1996–	In 1996, an ice core from about 320,000 years ago was successfully retrieved from an ice sheet near Dome Fuji Station. In 2007 an ice core from 720,000 years ago was retrieved. The air contained in them has been analyzed and the relationship between climate change and carbon dioxide levels is being studied.
Penguin behavior research	2011–	Video loggers were attached to wild Adélie penguins in 2011, and their predatory activity was successfully filmed for the first time from the penguins' perspective. Penguin migration was also successfully tracked with the use of a GPS logger and other devices.



Dr. Kazuyuki Shiraishi

Director-General, National Institute of Polar Research. Dr. Shiraishi is also professor of geology at the Graduate University for Advanced Studies (SOKENDAI) and is studying the geological history of the Antarctic continent. Since 2014, he has been chairman of the Council of Managers of National Antarctic Programs (COMNAP), which consists of 30 member countries.

Moments of Prime Minister Abe



During a visit to Washington DC, Prime Minister Abe met at the White House with U.S. President Donald Trump (February 2017).



Prime Minister Abe hosted a summit meeting and other events with Custodian of the Two Holy Mosques King Salman bin Abdulaziz Al-Saud of Saudi Arabia at the Prime Minister's Office (March 2017).



President Filipe Jacinto Nyusi of Mozambique came to the Prime Minister's Office, where Prime Minister Abe hosted a summit meeting and other events (March 2017).



In Hannover, Germany, Prime Minister Abe and Chancellor Angela Merkel of Germany toured the exhibition venue of CeBIT 2017, an international trade fair for information and communication technologies (March 2017).



Shaking hands with President François Hollande of France during a visit to Paris (March 2017).



At a meeting in Brussels, Belgium, with European Council President Donald Tusk (center) and European Commission President Jean-Claude Juncker of the European Union (March 2017).



Prime Minister Abe visited Rome, where he held a meeting with Prime Minister Paolo Gentiloni of Italy (March 2017).



Prime Minister Abe with a delegation of the U.S. Congressional Study Group on Japan and a delegation of Japanese legislators participating in the U.S.-Japan Legislative Exchange Program, who came together for a courtesy call at the Prime Minister's Office (February 2017).



Six years after the Great East Japan Earthquake, Prime Minister Abe traveled to Iwate Prefecture, one of the disaster-struck areas. He viewed the Taro Kanko Hotel, a six-story building that was flooded up to the fourth floor and whose first and second floors were totally destroyed. The hotel has been preserved as a site for learning about the destructive power of tsunamis (March 2017).

Speech of the Prime Minister

Delivered at CeBIT Welcome Night in Hannover, Germany, March 19, 2017

Full text: http://japan.kantei.go.jp/97_abe/statement/201703/1221682_11573.html

It all dates back to May last year. Chancellor Angela Merkel and I were meeting, and at one point she asked me, “Why don’t you make Japan a partner country at the CeBIT* next year? And you must also come.” Angela, I am indeed here. Japan is indeed a partner country. And also, Japanese companies are here, in a massive number, which is 118, a jump of more than tenfold from the previous year.

Today, soon after this event, a landmark document will be unveiled.

We choose to call it the “Hannover Declaration.” I would like to share with you my thoughts on the foundation that the declaration is based on.

Firstly, we are now in need of a new definition for machines. Machines equipped with AI or machines that are essentially robots

no longer perform only narrow, singular functions. Think of concerns we face as humans, like health. Think also of challenges at a global scale, like the supply of energy. The machines of tomorrow will be tasked with the mission of solving that multitude of challenges. The manufacturing industry will also change. It will become a “solution” industry.

None of those problems are solvable by a single machine, by a single company, even if it is technologically advanced, or even by single countries alone.

That leads us to the second point: we must cherish connectedness, above all else.

How can we connect machines with each other? A system to another system, and to a system of systems—how can they be made to relate to each other? What of the interplay between machines and humans for an extended lifetime? And indeed of the interface between and among groups of people, like countries and companies?

What kinds of connectedness will we build among each of these? We are in an age in which governments, businesses, and academe will rack their brains in competition with each other over how that connectedness should be designed. This is an age in which cooperation and collaboration will create added value and stimulate growth.

Third, and the final point I wish to emphasize about the declaration, is the importance of education and of technology standards.

In an age in which we must solve complex problems by regarding them as systems—an age in which all things and all people are interconnected—we will need new systems of modeling language and common technology standards.

I would like for Japan and Germany to contemplate these together. Together, let us develop common curricula and common standards.

* * *

There are only three things that are important for the future of Germany, Europe, and Japan. Number one is innovation. Number two: innovation. And number three: innovation.



* CeBIT is a trade fair held in Hannover, Germany, featuring applications of cutting-edge technology, including IoT, big data, artificial intelligence (AI), and robots. It is the largest such event in the world. At the March 2017 CeBIT, Japan participated for the first time as the official Partner Country.

Recall if you will that it was Germany and Japan that were the first instances in the history of humankind to prove that it is possible to achieve remarkable growth despite limited land mass and meager natural resources. We grew by turning disadvantages to our own favor, and it was innovation that made it possible.

It will be innovation too that will unquestionably resolve the issues we face in the future. For that reason, Japan has no fear of AI. “Machines will snatch away jobs”—such worries are not known to Japan. Japan aims to be the very first to prove that growth is possible through innovation even when a population declines.

* * *

Japan and Germany share some factors in common. In both Germany and Japan, it is in small companies where many of those taking on innovation can be found. Accordingly, every time Chancellor Merkel and I meet, we discuss how to foster exchanges among German and Japanese mid-sized companies and small- and medium-sized enterprises.

In February, representatives of cutting-edge German SMEs visited Japan. People watched in amazement as a robot known as “Franka” moved deftly to build a new Franka—that is, to replicate itself.

I am fully confident that true gems among the Japanese mid-sized companies and SMEs attending this year’s CeBIT will also broaden that sphere of astonishment in just the same way.

* * *

Germany and Japan share one more factor in common. We have both come this far precisely because we reaped the benefits of trade and investment.

It is said that IoT, the Internet of things, will connect everything. What that is describing, in other words, is the explosive force to expand by multiples, hidden within the network. The same can be said of national economies. To emphasize it once more, it is through connectedness that economies will grow.

Japan, having grown through reaping in abundance the benefits of free trade and investment, wants to be the champion upholding open systems, alongside Germany. That is my fervent wish. Of course, to do so, it will be necessary to have rules that are fair and can stand up to democratic appraisal. We must not create conditions by which wealth becomes concentrated among only some people or through which those who pay scant attention to the law come out ahead.

That is precisely why Japan and Germany, and moreover Japan and Europe, as those who value freedom and human rights and respect democratic rules, must act in cooperation. And that is why we must conclude an economic partnership agreement between Japan and the EU at an early time, in order to express this prominently. I appeal for that wholeheartedly.

Chancellor Merkel, shall we not move forward together, in order to maintain and reinforce the free, open, and rules-based system that has propelled us to where we are today?

* * *

A major turning point in the history of humankind has arrived. In prehistoric days, we ventured into the forest to hunt. If that is the first chapter of human history, then the second is when we succeeded in securing a stable number of food calories in the form of rice and wheat.

The curtain rose on chapter three as waves of industrialization arrived in what we call modern times; chapter four saw telecommunications and computers fuse, opening a new door.

We are now witnessing the opening of the fifth chapter, when we are able to find solutions to problems we had been unable to solve. This age in which all things are connected and all technologies fuse is the advent of “Society 5.0.”

Let us, Germany and Japan, together write the story of Society 5.0 from the very first page.

Chancellor Merkel, we will maintain a world that is open and respects rules, and is free and fair. And we will make it resilient. Given that, shall we not motivate young people to hasten over to the wide plains of innovation, to their hearts’ content?

The fifth chapter of humankind will surely be a world with a bright and rosy future ahead. Let us walk on, forward and then further still, believing in our strengths.



Hokkaido: Bridging a Bright Future with Russia

Hokkaido is the northernmost of Japan's four main islands and the largest of the country's 47 prefectures. Harumi Takahashi, Hokkaido's governor, states, "Hokkaido and the Russian Far East are geographical neighbors sharing a similar climate and natural environment. As a result, close ties in the form of private exchanges have existed between Hokkaido and Russia for some time. The Japanese language speech contest sponsored by the governments of Hokkaido and Sakhalin Oblast (province) was held for the 17th time in 2016. Municipalities are also actively promoting exchanges. Fourteen municipalities in Hokkaido have established sister city agreements with counterparts in Russia, more than any other prefecture. Such cities as Wakkanai and Nemuro with deep historical ties to Russia have added Russian to many of their traffic signs."

Hokkaido has been working in recent years to promote medical exchanges. Governor Takahashi notes, "The first medical exchange occurred when Hokkaido accepted a boy from Sakhalin Oblast who had suffered major burns for emergency care in 1990. Further exchanges have followed, such as providing training to young doctors from Sakhalin Oblast at medical institutions in Hokkaido." In October 2016, the Hokkaido-Sakhalin Oblast Cancer Symposium was held to promote medical exchanges and to improve medical technology. In fiscal 2017 (April 2017 to March 2018), seminars on medical technology will be held in Hokkaido, Sakhalin, and Khabarovsk.

Hokkaido is currently promoting an initiative known as the Five-Point Cooperative Package to encourage further economic exchanges with the Russian Far East. At the May 2016 summit meeting between Japanese Prime Minister Shinzo Abe and Russian President Vladimir Putin, the Japanese government presented an Eight-Bullet-Point Proposal for Economic Cooperation with Russia. Governor Takahashi states, "The Five-Point Cooperative Package covers such areas as the promotion of food safety, health, and longevity, along with technology for comfortable living in cold areas—items shared with the Japanese government's Eight-Bullet-Point Proposal for Economic Cooperation with Russia. Hokkaido intends to leverage these initiatives in working to step up the pace of exchanges."

Though over 70 years have passed since the end of World War II, Japan and Russia have yet to conclude a peace treaty. At the Japan-Russia summit meeting late in 2016, Prime Minister Abe and President Putin announced their sincere determination to end this abnormal situation during their generation. The biggest issue in this connection is the difference of standpoints with regard to the Northern Territories (Etorofu, Kunashiri, Shikotan, and the Habomais) in eastern Hokkaido. The two leaders agreed to start talks aimed at implementation of joint economic activities in fisheries, marine culture, medical care, the environment, and other fields on and around these islands.

With a view to the prospects for these joint economic activities, Hokkaido will undertake its own initiatives starting in fiscal 2017, including the holding of seminars to provide information for interested parties.

In hoping for a bright future in bilateral relations, Governor Takahashi states, "Having maintained friendly and economic exchanges with the Russian Far East, Hokkaido's role is bound to increase in Japan-Russia relations. Governor Oleg Kozhemyako of Sakhalin Oblast and I agree that regional cooperation is the foundation for relations between nations, and I intend to expand friendly and economic exchanges going forward."



Governor Harumi Takahashi

Born in Toyama Prefecture. Graduated from the Faculty of Economics, Hitotsubashi University. Joined the Ministry of International Trade and Industry (MITI) and served as a researcher at the Atlantic Institute for International Affairs in Paris. In MITI's successor, the Ministry of Economy, Trade, and Industry (METI), she held posts including director-general, Hokkaido Bureau of Economy, Trade, and Industry, and director, Training Institute of Economy, Trade, and Industry. Elected governor of Hokkaido in 2003; currently serving her fourth term—the first female prefectural governor to be elected four times.

Sister cities of Hokkaido and Russia

Hokkaido	Russia	Hokkaido	Russia
Sapporo	Novosibirsk	Wakkanai	Nevelsk
Hakodate	Vladivostok	Wakkanai	Yuzhno-Sakhalinsk
Hakodate	Yuzhno-Sakhalinsk	Monbetsu	Korsakov
Otaru	Nakhodka	Nayoro	Dolinsk
Asahikawa	Yuzhno-Sakhalinsk	Nemuro	Severo-Kurilsk
Kushiro	Kholmsk	Ishikari	Vanino
Kitami	Poronaysk	Teshio	Tomari
Rumoi	Ulan-Ude	Sarufutsu	Ozersky
Wakkanai	Korsakov		

There are 45 sister-city and friendship agreements between prefectures and municipalities in Japan and oblasts (provinces) and municipalities in Russia. Of these, 17 involve municipalities in Hokkaido, and Hokkaido itself has a friendship agreement with Sakhalin Oblast.



The Japanese language speech contest has been held since 2000. Laurita Dehtereva, the winner of the adult division of the 17th contest in 2016, gave a speech on what prompted her to begin studying Japanese and her struggles to master the language.



The annual Hokkaido Fair held in Yuzhno-Sakhalinsk introduces Hokkaido food products and tourist spots.

Hokkaido's Proposed Five-Point Cooperative Package

1	Food safety; health/longevity
2	Comfortable living in cold areas
3	Environmental safety
4	Local production/consumption of energy
5	Introduction of regular direct flights

The Five-Point Cooperative Package is an initiative to propose solutions for social issues in Russia as a joint effort by industry, universities and other educational institutions, government, and financial institutions and to promote the participation of Hokkaido businesses.



In connection with food safety, health, and longevity, one area of the five-point cooperative package, the "Hokkaido Garden" has been established in part of a greenhouse facility run by a Russian national firm in Vladivostok. Here tests have begun on vegetable farming using Japanese growing techniques applicable in cold regions.

Counter-Piracy Operations

A choke point for maritime transport between East Asia and Europe lies in the Gulf of Aden off the coast of Somalia, through which about 17,000 ships are said to navigate every year. But from around 2008 on, there was a sharp increase in attacks on merchant ships in these important waters by ransom-seeking pirates. Among the causes of piracy were the political turmoil and poverty in Somalia. The safety of maritime shipping, which plays a major role in international trade, is crucial for Japan. In view of this, and in order to contribute internationally, since 2009 Japan has deployed destroyers and




The Japanese destroyer *Hamagiri* and P-3C patrol aircraft performing an escort mission in the Gulf of Aden.

patrol aircraft from the Japan Self-Defense Forces (JSDF) to escort ships and conduct surveillance in the Gulf of Aden. These activities are conducted without regard to the ships' nationality, and over the eight years of the deployment the Japanese forces have escorted some 3,900 merchant ships through these waters.

Captain Atsushi Minami, who commanded the JSDF's 25th Deployment Surface Force for Counter-Piracy Enforcement, declares, "From 2009 the JSDF deployed one or two destroyers and two P-3C maritime patrol aircraft, and we've been conducting escort missions in which we accompany merchant ships as they pass through the area. The P-3Cs have been making surveillance flights on close to a daily basis. In this way we have been serving as a key element in the international community's cooperative efforts to counter piracy." And to further advance international coordination of these efforts, since 2013 Japan has also participated in the international Combined Task Force 151 (CTF-151), in which each country conducts zone-defense activities in its allocated area.

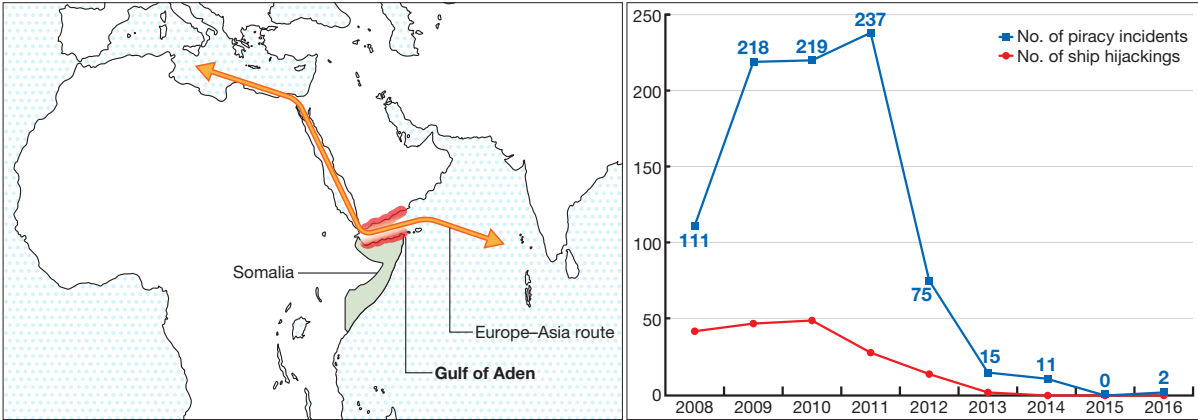
The Gulf of Aden off the coast of Somalia is a severe environment with daytime temperatures reaching 50°C (122°F). Members of the deployed units maintain a constant state of alert under these extreme conditions so as to be able to respond promptly to requests for help. Inside the ships are displayed messages of thanks from those who have been protected or rescued. Minami says that these expressions of gratitude are the strongest motivation boosters for unit members as they prepare themselves for future missions.

Thanks to the international anti-piracy campaign, the number of maritime piracy incidents, which amounted to more than 200 a year, declined sharply from 2012 on, and recently the level of the figures has been extremely low. But the coordinated international initiative remains essential for the maintenance of shipping safety in these waters. Minami explains, "Pirates in the area have not been completely eradicated. I believe that the visible presence of naval vessels from various countries is working to deter piracy. Protecting the significant international shipping lane off the coast of Somalia is a crucial mission for the sake of stability of East Asia's economy. We will continue our activities in cooperation with other countries." The Japan Self-Defense Forces will keep up their contributions to the peace and stability of the international community.



Restoring peace and order
off the coast of Somalia and
in the Gulf of Aden

[https://youtu.be/
KEFWH0sRfHs](https://youtu.be/KEFWH0sRfHs)



Units deployed by Japan for counter-piracy operations		International deployments														
<ul style="list-style-type: none"> Maritime force (1 destroyer): approximately 200 personnel with 8 Japan Coast Guard officers aboard Air force (2 P-3Cs): approximately 60 personnel Support unit: approximately 110 personnel in Djibouti <p>Note: Japan's deployed maritime force currently consists of one destroyer. The unit engages mainly in escort activities; when not so engaged, it conducts zone defense.</p>	<table border="1"> <thead> <tr> <th colspan="3">Naval vessels</th> </tr> <tr> <th>Escort</th> <th>Zone defense</th> <th>Patrol aircraft</th> </tr> </thead> <tbody> <tr> <td>Independent national tasking (Japan, China, India, ROK, etc.)</td> <td>CTF-151</td> <td>CTF-151</td> </tr> <tr> <td></td> <td>EUNAVFOR</td> <td>EUNAVFOR</td> </tr> </tbody> </table>	Naval vessels			Escort	Zone defense	Patrol aircraft	Independent national tasking (Japan, China, India, ROK, etc.)	CTF-151	CTF-151		EUNAVFOR	EUNAVFOR			
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	EUNAVFOR	EUNAVFOR														
<p>Warning and surveillance (P-3C) Conducting warning and surveillance operations and information collection and provision</p>																
<p>Zone defense Conducting intelligence, surveillance, and reconnaissance (ISR) activities in the area allocated by CTF-151.</p>		<p>Escort Escorting merchant vessels from various countries.</p>														

1	2
3	4

1. The Gulf of Aden is a narrow body of water at the northwest end of the Indian Ocean, forming part of the maritime route to and from Europe via the Suez Canal. It has had one of the world's highest levels of piracy; in 2009, over half of the world's piracy incidents, 218 in all, occurred here. 2. Number of piracy incidents and ship hijackings off the coast of Somalia and in the Gulf of Aden. (Source: International Chamber of Commerce, International Maritime Bureau.) 3. An exchange of gifts with Rear Admiral Giovanbattista Raimondi of the Italian Navy, which is participating in the European Union Naval Force. Japan continues to contribute to international activities in this field. 4. An overview of Japan's operations.

Atsushi Minami

Commanded the 25th Deployment Surface Force for Counter-Piracy Enforcement off the coast of Somalia and in the Gulf of Aden. For a period of 134 days starting in August 2016, this JSDF force conducted 30 escort missions guarding a total of 43 ships, of which 40 were not Japan-related.



Guiding Japan Visitors with Firsthand Information

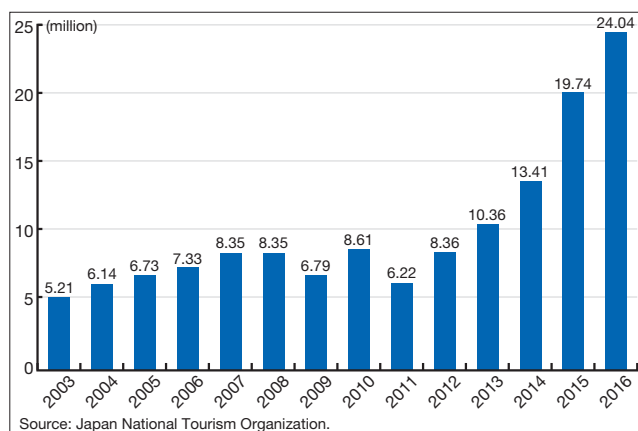
When Stefan Schauwecker launched the site japan-guide.com in July 1996 he was excited to use the Internet, still in its infancy then, to present an unbiased view of the country to a worldwide audience. “In the mid-90s, access to reliable information on Japan was limited, and reports in the media frequently sensationalized stories or reinforced stereotypes,” says the soft-spoken Swiss native. “I wanted to offer a more realistic perspective that reflected what I saw in my travels.”

After more than 20 years of running the site, Schauwecker has built it into one of the most extensive and trusted online sources of English-language information for travelers in Japan. His success is in large part due to an unwavering dedication to providing what he calls “practical details” covering a vast range of topics and destinations. A cadre of around five diligent writers and editors, all of whom are native English speakers, now help create and update the site’s original content, an aspect that distinguishes it from many of its competitors. Team members travel frequently, using their expert knowledge of Japan’s differing regions to sniff out the latest information and uncover new, interesting locations.

Schauwecker, who moved to Japan permanently in 2003, says a lot has changed over the last two decades. “The web has made it easier to find information and make bookings,” he explains, pointing to a growth in Japanese websites offering service in different languages and the emergence of low cost carriers. He insists, however, that the friendliness of locals along with the safety and depth of culture have remained major draws for tourists. “Travelers want to see something they cannot see at home,” he declares, which in Japan can include historical architecture, gourmet dining, shopping, or something as mundane as snow.

He is confident the current boom in travel to Japan will maintain its upward course and he gives high marks to national and local efforts aimed at making travel easier for overseas visitors. These include improving wi-fi access, expanding options for accommodations, and providing foreign-language information. “The government has done a good job at identifying critical elements and taking action on those fronts.”

Number of Foreign Visitors to Japan



Stefan Schauwecker

President of japan-guide.com. Born in Switzerland. After making his first visit to Japan in 1995, he launched japan-guide.com the next year. He has also published several books introducing beautiful Japanese scenery from a foreign perspective.

While an advocate of the “golden route” that includes established destinations such as Tokyo and Kyoto for first-time visitors, Schauwecker hopes more return travelers will seek out the charms of out-of-the-way locales. He points out that the Japanese countryside can give visitors “a genuinely different experience.” One of his top recommendations is a stay at a traditional hot spring inn as guests can enjoy authentic Japanese cuisine, dress, and bathing amid old-style architecture, and impeccable service.

Regardless the destination, though, Schauwecker intends for the site to continue providing top-notch information to help people explore Japan.

Schauwecker introduces several must-see destinations

Hida-Takayama

Set among picturesque mountains in Gifu Prefecture, Takayama offers travelers an exquisite peek into life in rural Japan. Easily accessible by train, the beautifully preserved town is populated by welcoming locals and has scenic streets lined with old-style buildings housing a variety of establishments, including shops selling new and traditional items, sake breweries, and art galleries. Visitors can also take advantage of the area's rich natural surroundings by hiking the many mountain trails. The historic village of Shirakawa-go, a UNESCO World Heritage Site, and Okuhida, which boasts some of Japan's nicest outdoor hot spring pools, are also located in the area.



Inside a preserved traditional house in Hida Folk Village, an architectural museum.

Nyuto Hot Springs

Located inside the Towada-Hachimantai National Park, Nyuto Hot Springs in Akita Prefecture is a collection of several rustic hot spring *ryokan*, or traditional inns, that retain the old-fashioned comforts of days gone by. One of these establishments, the 300-year-old Tsurunoyu, still uses gas lamps and has several rooms featuring a sunken hearth called an *iroiri*, making it appear to guests as if they have stepped back into feudal times. The milky white thermal waters of Nyuto are known for their curative powers, and bathers in the area's many outdoor baths may even discover heated artesian percolating directly beneath them as they quietly soak.



Fukuoka Outdoor Food Stalls

Fukuoka's profuse outdoor food stalls, called *yatai*, provide visitors the opportunity to rub elbows with local residents while savoring a variety of simple, tasty dishes. Spread throughout the city, the cozy stands accommodate only a few customers at a time, an arrangement that encourages friendly banter among the closely packed patrons. *Yatai* are generally open from the early evening until the early hours of the morning and serve up a diversity of hearty fare along with sake and other drinks. Popular menu items include such scrumptious selections as grilled chicken skewers, seafood, and pork-bone *tonkotsu* ramen, a local delicacy.

Naoshima Island

Among the scores of quaint islands that dot the beautiful Seto Inland Sea, Naoshima in Kagawa Prefecture presents visitors a unique opportunity to enjoy exquisite works of modern art among charming pastoral scenery. Easily accessible by ferry, it is one of the main venues of the Setouchi Triennale art festival. Even when the event is not being held visitors can visit the island's many museums that feature captivating works of contemporary art by internationally renowned artists. An especially intriguing element of the community is the way in which residents have combined its rural setting and art by converting traditional structures into arthouses.



A Society with Advanced Biometric Identification

Being able to prove who you are—this may be considered a natural state of affairs, yet has been difficult to achieve in our everyday lives. For example, we need a credit card and a PIN code or a signature to pay our bills. Liquid Inc., a start-up established in 2013, is working to revolutionize the identification process. Using biometric authentication—which is based on individuals’ unique physical characteristics, such as fingerprints and iris patterns—this company is aiming to make the process both more secure and quicker.



Liquid Pay was installed at a beach house at Yuigahama in Kanagawa Prefecture. It proved popular with users, allowing them to make payments without carrying money.

CEO Yasuhiro Kuda explains how he started his research in the field: “Ever since my student days, I’ve been highly interested in improving society’s systems. Looking ahead to the near future, when IoT [the Internet of things] will have advanced, and thinking about how I might contribute to making society safer and more convenient, I came to see biometric technology as a tool for this purpose.”

Biometric authentication has a huge opportunity in improving the consumer payment system. According to a 2015 survey, losses from credit card fraud amount to JPY 12 billion (USD 106 million) on an annual basis in Japan alone. “Biometric authentication is highly secure, but it hasn’t become the standard method of authentication because of its lack of convenience. The authentication process can take time, and the procedures can be complicated,” notes Kuda. “So we’ve come up with a technology for classifying and digitizing fingerprint patterns.” As a further barrier to unauthorized use, the company has developed a system, the “Liquid Pay,” which scans not one but three fingerprints. This reduces the risk of misrecognition to one in 90 billion.

Aside from the technological hurdles, being a start-up without a track record, Liquid Inc. faced the challenge of getting businesses to adopt its new payment infrastructure. But Kuda explains, “I was confident that our system was second to none in terms of processing speed and operating costs.” He made the rounds of corporations and stores and tirelessly explained the difference between Liquid Pay and rival systems. Thanks to these efforts, prospective clients gradually came to recognize the convenience of Liquid Inc.’s system and to adopt it. In 2015, two years after its establishment, the company caught a break. Liquid Pay was introduced at Huis Ten Bosch, a major theme park in Nagasaki Prefecture. Visitors who register their fingerprints at the entrance gate and make a deposit can then pay their bills at restaurants and shops throughout the park without pulling out their wallets. The system quickly drew wide attention as a revolutionary advance in cashless, cardless payment.

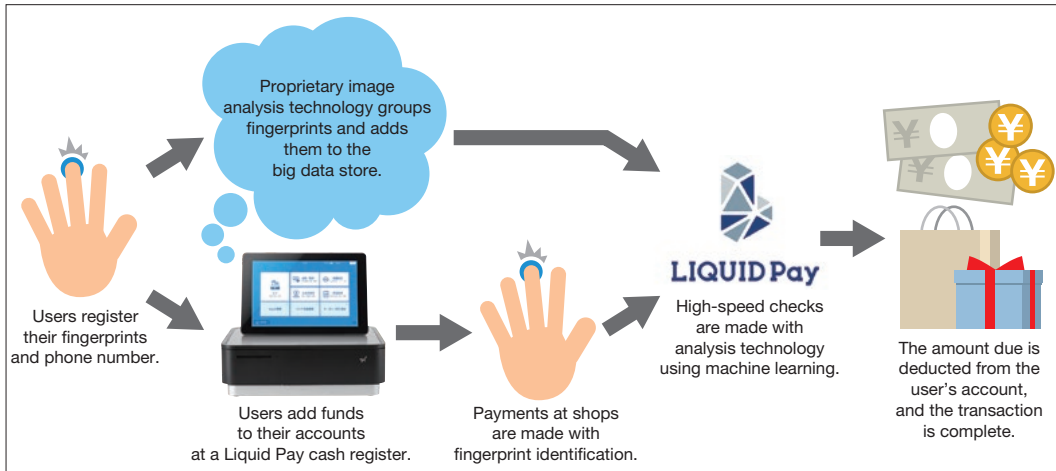
Now, Kuda and his colleagues are seeking opportunity in creating more convenient trips around Japan, targeting foreign visitors. Fingerprint authorization will allow people to check into hotels and make cashless, cardless payments throughout their trip without trouble or confusion, even at places they are visiting for the first time. A demonstration project is now underway for use as part of the “Omotenashi [hospitality] Platform” that the Ministry of Economy, Trade, and Industry (METI) is setting up in collaboration with local businesses.

Kuda’s work is far from over. In pursuit of his personal mission to contribute to society through biometric technology, he is striving along with his enthusiastic colleagues to enhance the technology and develop further applications so that biometric authentication can serve as a new basic platform for the world’s social infrastructure.

	<p>Innovation Japan [FINGERPRINT AUTHENTICATION WITHOUT IMAGE DATA]</p>	<p>https://youtu.be/ faouL9f9kSs</p>
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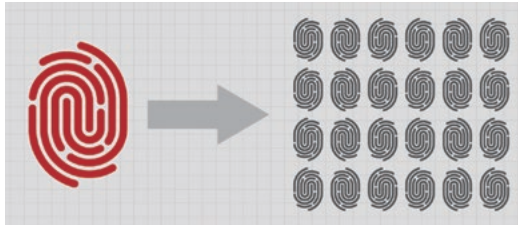
Note: U.S. dollar equivalents for Japanese yen amounts in this article are calculated at 113 yen to the dollar, roughly the rate at the time of publication.

The Liquid Pay System

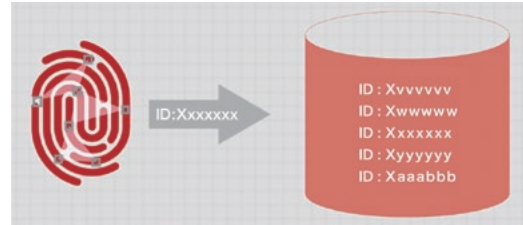


Liquid Pay allows speedy, secure payment using the company's original sensors and software to record fingerprint data while preventing duplication or other misuse, along with its own fraud-prevention system.

Conventional fingerprint authentication



Fingerprint authentication with new technology



Fingerprint authentication up to now has relied mainly on image data, which raises security concerns, such as the possibility of data theft. The Liquid Pay system is the world's first technology that relies on a new type of biometric authentication technology. The feature points of each fingerprint are digitized and indexed using a proprietary algorithm. And artificial intelligence is used to conduct speedy searches, making the authentication process more than 100 times faster than conventional methods. The system also authenticates sweat glands and veins for increased accuracy.



Yasuhiro Kuda

CEO, Liquid Inc. (<http://liquidinc.asia/en/>)
Worked for Daiwa Securities SMBC, from 2007 to 2011. After a spell as a fund manager at a venture capital firm, he established Liquid Inc. in December 2013, which has developed the Liquid Pay biometrics authentication system.

About Society 5.0

Japan is rapidly moving toward "Society 5.0," adding a fifth chapter to the four major stages of human development: hunter-gatherer, agricultural, industrial, and information. In this new ultra-smart society, all things will be connected through IoT technology and all technologies will be integrated, dramatically improving the quality of life.

Looking ahead to this new era, the government of Japan will do everything it can to encourage various players, including start-ups and "hidden gems" among middle- and small-sized enterprises, to come up with brand-new and innovative ideas presenting solutions for the world.

Making “Wheelchairs for Victory”

With the approach of the Tokyo 2020 Olympic and Paralympic Games, sports for people with disabilities are gaining a higher profile. Wheelchairs are essential equipment for athletes in Paralympic events such as tennis and racing, and they can have a major effect on outcomes. Japanese wheelchair manufacturer OX Engineering has been supporting para-athletes for more than 20 years with wheelchairs designed for use in competition.

OX started producing and selling wheelchairs in 1992. The company’s founder, who initially operated a motorcycle dealership, was himself a motorcycle racer skilled at modifying regular bikes for use in competition. He launched this wheelchair business after an accident in a test run left him disabled. The current president of OX is his son, Katsuyuki Ishii, who explains: “My father was a technician who loved challenges, and for many years he made motorcycles with design and performance tailored to customers’ demands. When developing wheelchairs, he sought to make the best, something that he would want to use himself. He worked hard to achieve a sporty appearance, light weight, toughness, and a good sense of fit for the individual. This approach underlies OX’s manufacturing.”

OX first supported para-athletes at the 1996 Atlanta Paralympics. The company continued working together with para-athletes in making steady improvements, and eventually its products began to be called “wheelchairs for victory.” Ishii says, “The demands of top athletes are very difficult to meet, requiring adjustments in units of millimeters and grams, and frankly the work is time-consuming and costly. But we feel their passion for competition and are strongly determined to provide equipment that will let them tap their abilities with enthusiasm. We want to make it so that those with disabilities can enjoy sports the same as other people. That’s the mind-set we take in developing sports wheelchairs.” These efforts have borne fruit, and OX-supported athletes from Japan and other countries have won a total of 122 medals—34 gold, 44 silver, and 44 bronze—in the eight summer and winter Paralympics since Atlanta.

The declining population and aging of competitors are issues today in the world of para sports. OX has developed sports wheelchairs for children as one part of its efforts to cultivate the younger generation of para-athletes. “We hope as many children as possible will come into contact with wheelchair sports and learn to enjoy competition, leading to the emergence of new para-athletes to represent Japan in the future,” declares Ishii. “Heading toward the Tokyo 2020 Paralympic Games, we are eager to do everything we can to support these athletes.”



Katsuyuki Ishii

Born in 1980 in Chiba Prefecture. His hobby is bicycling. Joined OX Engineering in April 2002, serving in posts including head of wheelchair sales in company-operated stores in Japan. Became a director of OX Engineering in 2012 and succeeded his father, the company founder, as president in January 2013.



Supporting para-athletes worldwide with sports wheelchairs

https://youtu.be/L6_Mwbp7UZA

Rolling to Victory with Japanese Engineering Excellence



Swiss wheelchair racer Marcel Hug, an Olympic gold medal and world title-winning para-athlete, visited Japan this February to take part in Tokyo Marathon 2017.

I entered the world of wheelchair racing at the age of 10. This is my first visit to Tokyo, to compete in the marathon. I have for many years relied on the engineering excellence of Japan's OX sports wheelchairs to carry me to the finish line.

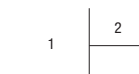
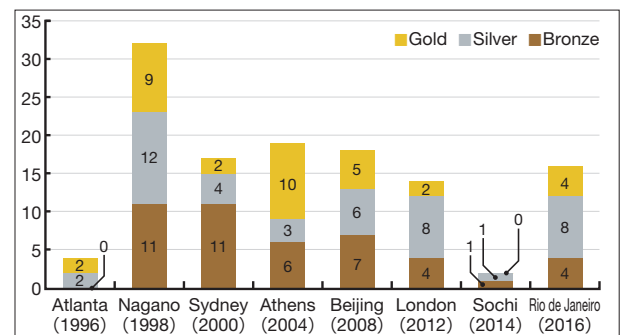
These products are of very good quality. They keep developing their race chairs. Every year they bring out something new. Some brands have had the same style for years, the same design, but not theirs. They always have something new, such as new materials, and they're always trying to make their race chairs lighter, but still stable.

Racing means a lot to me. It's my passion. Very early, I had some big goals, big dreams of winning a gold medal at the Paralympics. I like wheelchair racing—actually, I love it—for its speed. It's dynamic. It's powerful. And I really like the tactical part of the sport. You have to think about how you race.

It's so great to see the Olympic and Paralympic Games already being publicized even though there are still three and a half years to go. You see the signs all around Tokyo. I was happy to see the posters displaying the logo of both the Paralympics and Olympics. I think that's very special—it's not featuring the Olympic Games with just a little bit about the Paralympic Games. The two are treated equally. That's very positive.



Olympic medals of para-athletes supported by OX Engineering



1. The WeeGO sports wheelchair is made in two sizes, combining stylishness with the ruggedness to withstand harsh competitive use. Wheelchair tennis gold medalist Shingo Kunieda serves as an advisor for development.
2. OX Engineering has worked with top para-athletes from Japan and other countries, including Kunieda and Swiss wheelchair racer Marcel Hug. Since the 1996 Atlanta Paralympics it has provided wheelchairs to para-athletes at both the summer and winter Paralympic Games.

Conveying the Spirit of Japanese Cuisine to the World

“*Washoku*, traditional dietary cultures of the Japanese” was inscribed on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity in December 2013. This has sparked greater interest worldwide in healthy Japanese cooking, known for making minimum use of oils and fats. The European epicenter of the Japanese food boom is France, thanks in no small part to the efforts of Hirohisa Koyama, who has spent the past 25 years conveying the essence of Japanese cuisine through his lectures at the prestigious Ferrandi school of culinary arts in Paris. One of Japan’s top chefs, Koyama is famed for his mastery of single-edged kitchen knives, with which he cuts ingredients beautifully and deliciously, and his culinary finesse in combining his original ideas with traditional techniques.

Koyama’s activities as an ambassador of *washoku* in France began in 1992, when he gave the first-ever lecture on Japanese food to be delivered at Ferrandi. He reflects on his thoughts at the time: “Japanese chefs who had studied the secrets of French cooking in France were finding success in Japan. I wanted in return to introduce Japanese culinary techniques to France.” The only tools of his trade that he brought from Japan were his knives and soy sauce. “I will present you with genuine Japanese cuisine using solely French ingredients,” he wrote in the invitation sent to noted French chefs. Although he was little known in France at the time, 86 leading chefs packed the lecture room. One of the attendees was Pierre Hermé—one of the most renowned pâtissiers in France—who said of his first-hand encounter with Koyama’s knife skills, “I will never forget discovering that the manner in which the knife is applied alone can change the taste of sashimi so dramatically.” Koyama, for his part, was struck by the sheer passion of these foremost chefs for culinary inquiry.

His prolonged experience teaching Japanese culinary techniques to the French has been valuable for Koyama in that it has prompted him to take a sharper look at Japanese cuisine. Conveying his skills and his spirit to people of a different culture and language calls for the ability to explain these things logically.

In both France and Japan, culinary techniques have been honed through centuries of tradition. The chefs of both countries, together with the artisans who produce traditional foodstuffs and tableware, have kept alive artistic dietary cultures. “French cuisine features great sophistication in presenting food beautifully,” Koyama says. “Meanwhile, the essence of Japanese cuisine lies in the use of single-edged knives. Chefs of both countries learning from one another and incorporating key techniques from one another’s discipline to rise to greater culinary heights—that, I believe, will help develop both cuisines and constitute cultural exchange in the truest sense. It is my hope that I can help broaden the reach of traditional cuisine across differences of nationality and genre and bring Japan’s healthy and tasty dietary culture to people across the world.”



Hirohisa Koyama

Born into the family that runs Aoyagi, a long-established traditional Japanese restaurant in Tokushima Prefecture. After training at the famed Japanese restaurant Kitcho in Osaka, took over the family business and became the third-generation owner of Aoyagi. In recognition of his work organizing Japanese food fairs in France at the invitation of top hotels such as the Hôtel Plaza Athénée and the Ritz Paris and his contribution to culinary exchange between the two countries, the French government bestowed on him the title of Officer of the Order of Agricultural Merit in 2010. In February 2017, he was appointed as the first non-French member of the strategy committee chaired by Joel Robuchon at Ferrandi.



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1. A dish prepared as part of a collaborative *haute cuisine* dinner prepared by Koyama together with Alain Ducasse, a renowned French chef, using ingredients from the famous Japanese restaurants Aoyagi, Kitcho, and Ten-ichi and from the confectionery Toraya. This “fubako” dish designed by Koyama was subsequently added to the menu at one of Ducasse’s restaurants. 2. A dish called “Naruto-tai no hegi-zukuri”: Naruto *tai* (sea bream) has firmer flesh than other types of *tai*. Koyama created and named this dish, in which the fish is sliced thickly parallel to the grain for eaters’ enjoyment. Previously the standard methods of preparation were *hira-zukuri* (rectangular slicing) and *usu-zukuri* (thin slicing). 3. Koyama skillfully slices *tai* using a traditional Japanese single-edged knife. The way the knife is inserted into the slice changes the texture, making it possible to bring out greater flavor from the same ingredients.



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4. At Ferrandi, teaching students in their final year about the key points for preparing *yaki-zakana*, Japanese-style broiled fish, as part of a special class. 5. With the highly renowned French chefs who attended his lecture on Japanese food at the Ferrandi school of culinary arts in Paris. 6. In February 2017 Koyama was appointed as the first non-French member of the Paris Chamber of Commerce and Industry (CCIP)’s Ferrandi strategy committee. He is pictured here with Bruno de Monte, the school’s director.

Traditional Sound to Bridge Cultures

Pavel Io is a Russian man who has been captivated by a classical Japanese bamboo flute, the shakuhachi. Io first encountered the sound of the shakuhachi as a teenager, when he was watching a documentary show on TV. As a player of the tin whistle, he was familiar with almost all the major wind instruments. However, this sound was nothing like the ones he had heard before; it had the elegance of a flute and the gentle touch of a clarinet. When he learned that this sound was from an instrument called the “shakuhachi,” he was online purchasing one before he knew it. The more he taught himself how to play it, the more drawn in he was by its fascinating sound. As if to spur his burgeoning passion, Russian musicians’ interest in classical Japanese music rose, leading the Tchaikovsky Moscow State Conservatory, renowned as one of the world’s top three music conservatories, to offer a shakuhachi course open to all. Pavel jumped at this opportunity, taking the course, which had a Japanese instructor, and following up to the point of becoming a professional shakuhachi player in Russia.



Playing the shakuhachi at Rachmaninoff Hall, Tchaikovsky Moscow State Conservatory, in December 2016.

Determined to deepen his understanding of the shakuhachi’s sound, in November 2013 Io moved to Japan, the instrument’s native land. He based himself in Okayama Prefecture near the International Shakuhachi Kenshu-Kan (training center) and began studying under the famed Toshimitsu Ishikawa. Since then he been performing and teaching all over Japan. Three years since his arrival in Japan, Io’s pursuit of the shakuhachi is far from over. He plans to expand his performance range and has committed himself to study at the Graduate School of Music at the Tokyo University of the Arts starting April 2017. The decision stems from a strong desire to further deepen his understanding of the shakuhachi classics in the hope of further advancing to the next level as a performer. “Every pianist and violinist can play the classics of Western music, such as the works of Beethoven,” he explains. “And I want to solidly study the classical works of shakuhachi music, as there’s a certain sonority that can only be achieved when you’ve mastered the classics.”

Io continues his quest, aspiring to become a shakuhachi artist who uses the power of his music to link Russia, Japan, and the world. “I do not want to be just a shakuhachi performer—someone who just plays good music. I also want to deliver much more, including inspiration. One culture’s music can inspire another’s—for instance, there is a theory that one of the most respected koto [Japanese zither] songs, *Rokudan no shirabe*, composed in the seventeenth century, was somewhat influenced by Gregorian chant. I strongly believe that music is the ultimate cross-border bridge, and I would like to be one of those who can deliver inspiration across borders.”



Pavel Io

Originally from Stupino, a town about 80 kilometers (50 miles) south of Moscow. Learned to sing and to play the tin whistle-like Russian flute from his vocalist mother from the age of three. Studied the fundamentals of shakuhachi playing under Alexander Iwashin and Kohei Shimizu in a shakuhachi course at the Tchaikovsky Moscow State Conservatory. Took part in a performing group led by Margarita Karatygina of the same conservatory using traditional Japanese instruments. Moved to Japan in 2013. Won a prize for excellence at the 22nd Japanese Hougaku Music Contest in 2016. Passed the Japan Broadcasting Corporation (NHK) Japanese traditional music audition and appeared on the NHK-FM radio program *Hogaku no hitotoki*.



Above: Io sits at the Noh theater of Koraku-en, a Japanese garden in Okayama Prefecture, where he has performed in the past. Left: Koraku-en, created for the local lord in the seventeenth century, is one of the Three Great Gardens of Japan together with Kenroku-en in Ishikawa Prefecture and Kairaku-en in Ibaraki Prefecture. Its seasonal flowers and traditional structures charm visitors and make its theater the perfect setting for the classical sounds of Io's shakuhachi.

Deeper Exchanges Through the Food Cultures of Japan and Italy

Six months have passed since I came to Ichinomiya City in Aichi Prefecture as a Coordinator for International Relations (CIR). Through my work I have learned that Japanese people are very diligent. Seeing how everyone works hard toward a goal, I want to do the same, and it makes me happy to sense my own growth.

I majored in Japanese at a university in Venice. During my student years, I came to Japan twice to study Japanese. It's hard to say precisely how I came to love Japan, but it is something like first love. I feel so comfortable in Japan that it makes me intuitively feel like I belong here. After graduating from university, I came to Japan again and worked at a store handling Italian food while attending a Japanese language school. During that time I learned that Ichinomiya, a friendship city with Treviso, where I grew up, was recruiting a CIR, so I immediately applied for the position.

When I first started working as a CIR, I felt a sense of pressure, thinking that I must do this, that, and the other thing to serve as a bridge between Japan and Italy. However, a CIR from New Zealand with more years of experience advised me not to fret so much. Now I am trying to enjoy my life in Ichinomiya. I have appeared repeatedly on a community radio program on international exchange and have participated in local festivals. I am stimulated by the local people I come into contact with through my CIR work.

I have also started working to deepen mutual understanding through the food cultures of Japan and Italy. Treviso is famous for its Prosecco white wine. Italian people in general love wine, considering it to be an integral part of their lives. In March 2017 I held a wine seminar in Ichinomiya. About 30 people attended the event, where I described the history of wine, how it is made, and its varieties. We even had a wine tasting. Participants reported that they learned a lot and enjoyed the wine. I felt that the seminar helped to make Treviso better known.

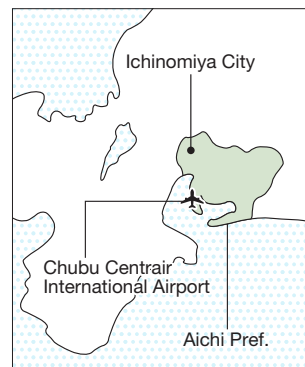
One thing I want to achieve during my term as a CIR is to invite people from Treviso on a tour of Ichinomiya to experience its food culture. Japanese cooking and Italian cooking differ in some respects, such as the seasonings they use, but they also have many points in common: Both seek to produce delicious dishes by using fresh ingredients and paying close attention to details like the choice of matching ingredients and seasonings. I am certain that learning about the similarities of food culture will cultivate a sense of friendship with and closeness to Japan.

The G7 Summit will be held in Italy in 2017. I hope that this will serve as an opening for the peoples of Japan and Italy to develop greater interest in each other. As a CIR, I want to work to deepen exchanges to the point that the people of both Ichinomiya and Treviso will all be familiar with each other's cities.



Alessandra Grillo

Born in the city of Treviso in the Veneto region of Italy. Began studying Japanese in junior high school using an Italian-Japanese dictionary. She has made *ichigo ichie* (treasure every encounter), a phrase used in her favorite Japanese TV series, her personal motto. She has spent her free time traveling with friends to Hokkaido, Ise, Shirakawa-go, and other parts of Japan. She plans to visit Nagasaki and Kanazawa in the future.



Participating in a local festival in Ichinomiya.



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1. Alessandra holds a wine seminar for Ichinomiya residents. 2. With colleagues of the International Group of Ichinomiya City Hall. 3. Broadcasting a show for a community FM station.

About the Japan Exchange and Teaching (JET) Programme

The Japan Exchange and Teaching (JET) Programme began in 1987 with the goal of promoting grass-roots international exchange between Japan and other nations, and is now one of the world's largest international exchange programs. JET participants are placed in every region of Japan and work in one of three positions: assistant language teachers (ALTs), coordinators for international relations (CIRs), or sports exchange advisors (SEAs). In 2016, the JET Programme welcomed 4,952 participants, and currently there are approximately 62,000 alumni from 65 countries living in all parts of the world.



The JET Programme official website
<http://jetprogramme.org/en/>

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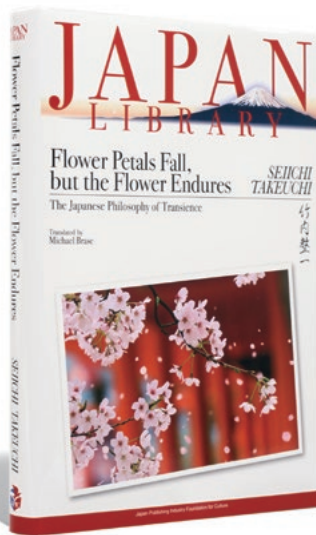
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Communicating with Columbia Business School

In March 2017, the author Seiichi Takeuchi held a special seminar with the Columbia Business School. There he explained the characteristics of Japanese philosophy: "If hidden, it is the flower. If not hidden, it cannot be the flower." The students responded with incisive questions.





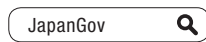
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