



THE AMERICAN CHAMBER OF COMMERCE IN JAPAN

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THE VOICE OF GLOBAL BUSINESS IN JAPAN

Changed Reality

**US Ambassador to Japan
Rahm Emanuel shares his
views on the state of the
bilateral relationship**

SPECIAL FOCUS

Health & Technology

COUNSELING

State of Mind

How artificial intelligence is helping identify mental health concerns for better treatment

NUTRITION

Sushi Singularity

3D food printers offer a vision and taste of the future—but will consumers embrace it?

FEMTECH

Digitizing Women's Health

Startups and entrepreneurs leverage technology to improve care and equality

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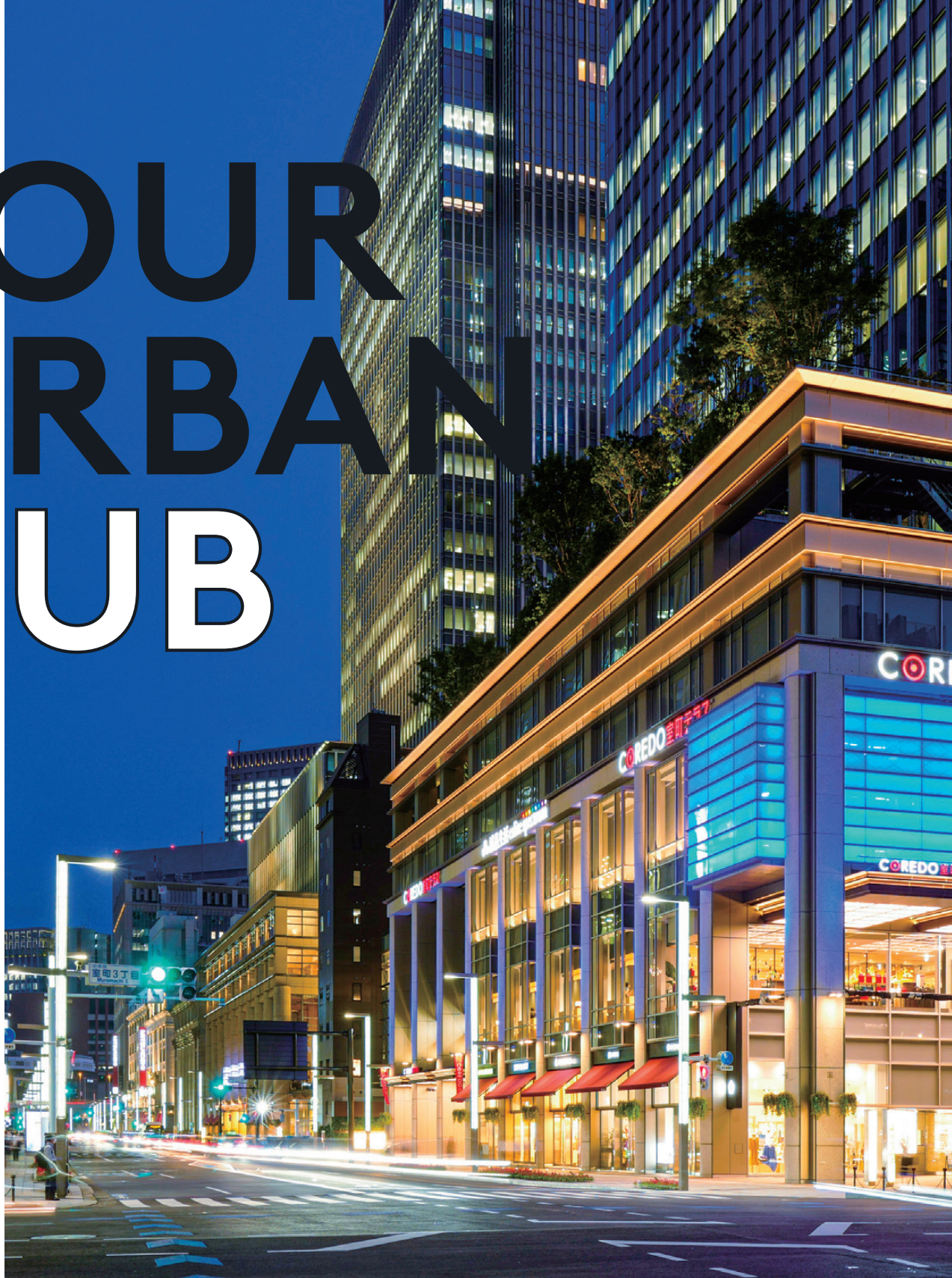
Nobuyuki Hirano

Former chair, president, and group CEO of Mitsubishi UFJ Financial Group, Inc. (MUFG) & chair of the Japan-U.S. Business Council



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Healthy Pursuits

Entrepreneurship sprinkled with innovation is changing the future of food and health through technology

The intersection of health and technology has become an important part of my life. They say that when you turn 40 your body starts to fall apart. They also say that 40 is the new 20. I say that neither is true, not entirely, but as you age you do have to work harder to stay fit. As I turn 50 this year, a decade of navigating that forties-fitness maze has helped me figure out how to apply tech to the challenge.

I've been a techie since I was 10 years old and my great grandparents gave me a Commodore 64 computer for Christmas, so I'm always at the front of the line, eager to jump into the pool of latest innovations. Apple Watch and the Oculus virtual reality headset are already part of my health and fitness routine, and there's plenty more out there to be excited about and to help us live longer, healthier lives.

The theme was inspired by the great success of the ACCJ Healthcare x Digital (HxD) competition and the incredible work and dedication of the organizing team.

In this issue of *The ACCJ Journal*, we embrace the vision, ideas, and creations of those entrepreneurs and companies who are developing solutions to the wellness challenges facing society.

The theme was inspired by the great success of the American Chamber of Commerce in Japan (ACCJ) Healthcare x Digital (HxD) competition and the incredible work and dedication of the organizing team. Preparation is well underway for the third annual event, which will take place later this year. The theme this time is Empowering Elderly Patients through Digital Health and will expand the format to include both an ideathon and a hackathon.

A couple of last year's winners are included in features in this special health and technology issue of *The ACCJ Journal*. Oishii kenko Inc., winner of the Empowering Patients Award and People's Choice Award for their nutrition app, shares thoughts on future food (page 34), while From Japan and Beyond

Award winner Lanex Co., Ltd. talks about digitizing women's health (page 24).

Steppin' Out

The other big theme of this issue comes in the form of photos, not words. A surge of energy has been flowing through the ACCJ as we begin returning to in-person events, and you'll find pages filled with scenes of networking, information sharing, and just plain fun. For me, it was a joy to produce this issue for that reason alone. After more than two years with very few (often zero) photos from such gatherings, I may have gone a bit overboard with my layouts. But I wanted to share with you the excitement that is in the air. This is what the ACCJ is all about: people coming together to share, explore, innovate, collaborate, and build the best possible business community and society.

For those who could not attend, I've recapped two major in-person events (which were also livestreamed to remote viewers). At one, the ACCJ presented the Person of the Year Award to former Mitsubishi UFJ Financial Group, Inc. chair, president, and group chief executive officer Nobuyuki Hirano (page 14). At the other, we welcomed US Ambassador to Japan Rahm Emanuel with a VIP session and luncheon (page 10). For me, it truly felt like I had fallen through a time portal to 2019. Walking into the New York Ballroom at Tokyo American Club and seeing so many people talking, exchanging business cards, listening to presentations, and eating felt like time had been paused and suddenly restarted. It was a great experience.

And let's not forget about the Chubu Walkathon, our annual charity fundraiser organized and hosted by the ACCJ Chubu chapter. They did a wonderful job of adapting to the pandemic and embracing the mantra that I know so well from my years as an orchestral musician: the show must go on. This year, they kept the livestreaming aspect but were able to bring back much more of the activity to Nagoya's Meijo Park. I couldn't attend, but the photos on page 18 tell the story as more than 1,000 people participated and raised over ¥7 million.

So, here's to the new normal of more in-person events and to the health and fitness needed to embrace the activity as we go steppin' out into the light. ■



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Stay Engaged

As the pandemic enters a new stage and direct communication opens up, the chamber is fostering lasting change—thanks to all of you.

One of the greatest attractions of the American Chamber of Commerce in Japan (ACCJ) is our myriad activities and the vibrancy of our members. From networking to advocacy to information exchange, the ACCJ is not only the voice of global business in Japan, but a dynamic, rewarding community.

The coronavirus pandemic challenged our ability to sustain our energy, but our members are resilient and resourceful. We not only adapted and maintained our inspiring event schedule and connections virtually, but we gained new skills along the way that now allow us to extend our reach and foster greater engagement as the way we interact continues to evolve.

Look at the event photos on pages 20–21. Those of you who were there felt the energy in the air as the veil lifted. Seeing our members together at in-person events filled me with optimism, the sense of urgency

[I ask] all chamber members to embrace the sense of urgency that is defining the world ... and help the ACCJ continue to champion strong partnerships and communication.

to shake hands and see faces, to get back to business, to reignite advocacy efforts, and to reinvigorate our relationship with government back in Washington. All safely, of course.

Hello, Capitol Hill

Speaking of government, it was an honor to lead, as president, an ACCJ delegation to Washington for our first DC Doorknock since before the pandemic. I was joined by ACCJ Chair Eriko Asai, Governor Victor Osumi, Special Advisor Christopher LaFleur, and Executive Director Laura Younger. Engaging face-to-face with members of the executive branch and Congress once again is very important to the chamber's advocacy efforts.

With the recent rollout of the Indo-Pacific Economic Framework—an occasion to which the ACCJ was invited—and the recent Quad meeting of leaders from the United States, Japan, Australia, and India, the US–Japan partnership continues to be the most important nexus for peace and prosperity—not just in the region, but for the global order.

We in the ACCJ are a key conduit for lawmakers in Washington to what is going on in Japan in terms of the business aspects of the bilateral relationship, and through our discussions during the DC Doorknock we have had a positive impact over the years. As business leaders on the ground, we experience firsthand the opportunities, obstacles, and ground-truth in Japan. As a trusted primary source in a world awash with information and disinformation, our voices are heard and valued by the administration and members of Congress.

The way in which Washington is engaging with the ACCJ and the administration of Japanese Prime Minister Fumio Kishida is important. There's energy and urgency in the US–Japan partnership on all fronts—from the economy to national security—and you can see this in the number of Congressional delegations (well over 10 percent of the Senate leadership) coming to Japan, capped by US President Joe Biden himself in late May. We are pleased and encouraged to see the United States leading in the region, and the heightened role Japan has taken on the world stage.

US Ambassador to Japan Rahm Emanuel has been an incredibly positive addition to the US–Japan dialogue and a valuable partner for the ACCJ. We have hosted him at several meetings and events, including a special welcome luncheon (page 10). His energy, enthusiasm, and attitude are welcome, timely, and highly infectious!

Opening Up

In terms of advocacy and getting results, I'd like to thank you all for your important contributions to our core advocacy document—something new we have tried this year in addition to our viewpoint papers. For example, your input, leadership, and energy pushing for fair and science-based policy regarding Japan's border restrictions very quickly led to results. We, combined with the voice of our fellow foreign chambers of commerce and other organizations—both foreign and domestic—are making a real difference.

Stay Engaged

I will end by asking all chamber members to embrace the sense of urgency that is defining the world we find ourselves in—one of transition—and help the ACCJ continue to champion strong partnerships and communication to create the best environment for global business in Japan. ■



Om Prakash
ACCJ President

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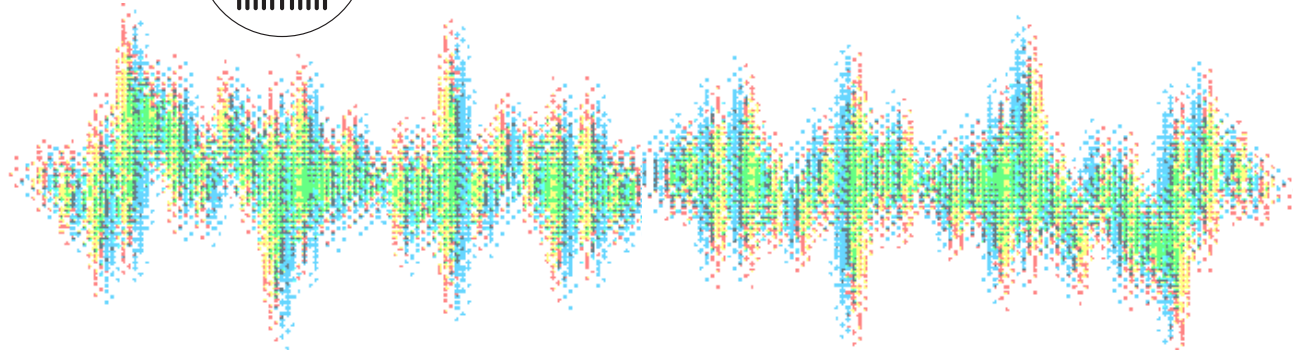
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Celebrating Independence Day

Wishes for a very happy Fourth of July and a look at the road ahead from Ambassador Emanuel and the US Embassy, Tokyo

Iwould like to wish our friends and partners at the American Chamber of Commerce in Japan (ACCJ) a Happy Independence Day on the 246th anniversary of the founding of our great nation. As I look back on my first six months in Japan, we should be proud of what we have accomplished together in advancing US interests in partnership with our closest ally in Asia. Thanks in part to the leadership of the ACCJ, we successfully persuaded the Japanese government to ease entry restrictions and allow business travel and tourism to resume once again. Looking ahead, there is much more to do.

The US–Japan Alliance has much to celebrate as well, as Japanese policy has shifted from protecting and preserving our bilateral security alliance to projecting its strength outward in defense of a free

We are fortunate to have strong friends at the ACCJ who share our vision, values, and sense of mission.

and open Indo–Pacific region. Prime Minister Fumio Kishida warmly welcomed President Biden for their summit in May, underscoring the vital importance of our alliance in upholding democratic values and rallying other countries in defense of a rules-based order. Together, they co-hosted the launch the Indo–Pacific Economic Framework for Prosperity with a dozen other founding partner countries. Japan was our essential partner in this initiative, helping to bring partners from the Association of Southeast Asian Nations to the table and champion the rules-based economic order in the region.

Nowhere is the challenge to international order clearer than in Russia's unprovoked and unjust war of aggression in Ukraine. Russia's invasion threatens peace, prosperity, and the rules-based order established after the Second World War, as it continues to drive global inflation and exacerbate food instability throughout the world.

The response to Russia's war of choice has been strong, swift, and unified, with the United States and Japan leading more than 140 nations in standing against the Kremlin. The Kishida Administration has matched our actions step-by-step on sanctions and export controls, and has sometimes even been ahead of us. In the face of this challenge, we also enjoy the opportunity to build a more prosperous and secure future. The united response has galvanized the North Atlantic Treaty Organization (NATO) member nations—and NATO-aspirant countries such as Finland and Sweden—more than any other event in the past decade, and their commitment to the alliance is as firm as ever.

The collective response to Russian military adventurism is already having a ripple effect beyond European shores. With Beijing's eyes set on Taiwan and dominance in the Indo–Pacific region, we can be sure that the People's Republic of China is watching carefully to see whether Russia can weather economic and political isolation. As CIA Director Bill Burns recently noted in a May 7 Reuters story, the costs that Russia is bearing is affecting Beijing's calculation about Taiwan.

The lesson for us to bear in mind is that unity represents a vital strategic asset. It's what separates us from our authoritarian competitors. At a time when globalization seems to be in retreat, alliances and partnerships with like-minded nations matter. What we do today to leverage the US–Japan alliance to build unity across the Indo–Pacific region over the next three years will define the next 30 years.

We also need to keep our eyes on the situation closer to home. We can provide a better living for the people of our two nations by implementing measures to make our economies more inclusive and by reimagining Japan as a global financial center for the 21st century, in partnership with the United States. Thankfully, we are fortunate to have strong friends at the ACCJ who share our vision, values, and sense of mission. I am confident that, together, we can make the changes necessary to pass along the same opportunities that we enjoyed.

Happy Independence Day. We have a lot to do, so let's get to work. ■



Rahm Emanuel
US Ambassador to Japan

Changed Reality

US Ambassador to Japan Rahm Emanuel shares his views on the state of the bilateral relationship

When Rahm Emanuel arrived in January as the 31st US ambassador to Japan, he wasted no time in building new connections and strengthening existing ties between the two countries. His experiences as mayor of Chicago, President Barack Obama's chief of staff, a member of the US House of Representatives, and senior advisor to President Bill Clinton coalesce into a whirlwind of diplomatic energy. He has already visited 10 of Japan's 47 prefectures and attended events stretching from Hiroshima to Otsuchi, in Iwate. And his love of trains and use of the country's mass transit has captured the hearts of Japanese media.

quipped, "Intros like that make you wish your parents were here, because you know your mother would be proud and your father would be amazed."

Impact on Investment

Emanuel began by noting that, after two years without an ambassador to its most important ally in the most important region, the White House and President Joe Biden are placing great value on Japan. The bilateral relationship, Emanuel believes, is at an inflection point. "We are no longer discussing, as we have for the past 40 years, alliance protection. I think the US-Japan

"WE ARE NO LONGER DISCUSSING, AS WE HAVE FOR THE PAST 40 YEARS, ALLIANCE PROTECTION. I THINK THE US-JAPAN RELATIONSHIP HAS MATURED INTO ALLIANCE PROJECTION."

On May 16, Emanuel took time out from this fast-paced schedule to speak to members and guests of the American Chamber of Commerce in Japan (ACCJ). Organized by the ACCJ Government Relations Committee, the luncheon at Tokyo American Club saw more than 200 in-person and remote attendees listen as the ambassador shared his thoughts on Japan and the great potential for the bilateral relationship. Emanuel also graciously responded to a range of questions during a lengthy Q&A session.

Following a welcome from committee Vice-Chair Anne Smith, ACCJ President Om Prakash delivered opening remarks. Noting that the ACCJ, as the voice of the US business community, has enjoyed a close and valuable relationship with the US Embassy, Tokyo, over the course of the chamber's nearly 75-year history, he said, "I can't think of a better person at the right time in the right place than this man." In response, the ambassador

relationship has matured into alliance projection," he explained. "Yes, it's about the two countries, but it is about the two countries projecting forward into the region in a shared way."

As he said this, the embassy was preparing for Biden's May 22-24 visit. That the trip took place so soon after the ambassador's arrival highlights how their long working relationship energizes efforts to build cooperation with the administration of Japanese Prime Minister Fumio Kishida.

Stable, Sustainable Business

The challenges facing the world are many, and some are shaking the foundations of long-held approaches to business operations.

Emanuel said he feels we are transitioning from neoliberalism to a world in which consideration of potential conflict and political turmoil must play a key role in corporate decisions.



“There have been three major events that have shaken people and their calculations of what is going to be the road going forward,” he said. “And it’s a level of uncertainty, and an intensity of uncertainty, that really hasn’t been experienced in a long time when it comes to international affairs and international economics.”

“My own view is that low cost and efficiency, which have been the guiding North Star for your individual companies for how you make investments, where you make investments, etc., those North Stars are slowly but surely ... being replaced by stability and sustainability. No company today making a major decision economically, internationally, is going to be stuck with a major investment in an insecure, unstable political environment, a country that can one day have major sanctions [placed] on it,” he continued, alluding to the fallout from Russia’s invasion of Ukraine and the potential for future conflicts.

“I said when I was confirmed, I think that what we do in the next three years, as the US and Japan, will determine our relationship for the next 30.”

The ambassador believes that, if Kishida emerges victorious in the July elections, Biden has a chance to build a solid foundation with the Japanese prime minister, with whom he came to be on a first-name basis after they had spent just one day together in May.

Emanuel knows what can happen when there is instability at the top, and how that can impact the bilateral relationship. As Clinton’s senior advisor, he saw six Japanese prime ministers come and go in eight years. “As soon as you started to get to know somebody, they were gone,” he said. “There’s a chance President Biden will have one prime minister for his tenure,” he continued. “That’s a unique opportunity not only to develop a relationship but [to work with] a person who, without an election overshadowing decisions, has the ability to make some real

“I THINK THAT WHAT WE DO IN THE NEXT THREE YEARS, AS THE US AND JAPAN, WILL DETERMINE OUR RELATIONSHIP FOR THE NEXT 30.”

New Calculus

The coronavirus pandemic, he noted, has already exposed the fragility of supply chains, and the war in Ukraine is having a similar impact in how it raises concerns over uncertainty in and around political systems, even in democratic countries. “You’re going to start to change the calculus of how you make investments, based on whether a country is politically stable and if it lives by the rule of law. Does it have the resilience and sustainability that you need as a company?”

Speaking of uncertainty as it pertains to international trade, Emanuel said that we are witnessing the emergence of a new political and economic equation, one that will become clearer over the next five years. To stability and sustainability he added resilience. “Each of those, in some way, becomes more dominant in how we think about political decisions, commercial decisions, and economic decisions.”

He closed by saying that he feels we have a unique opportunity to advance US–Japan relations.

decisions for the future of the US–Japan relationship, including as it relates to the Indo–Pacific.”

To that end, Emanuel applauded Kishida for his leadership in the face of recent global uncertainty.

“One of the things I think Prime Minister Kishida has done very successfully is he has taken the Indo–Pacific and the Transatlantic and collapsed them into a single strategic sphere,” he said. “Just in the past 10 days, he’s hosted the European Union president, the Finnish prime minister, the chancellor of Germany and, two days prior to that, on his visit to Europe, he was with the British prime minister, the Italian prime minister, and the Pope. That should be seen as a way in which Europe now has a vested interest in a free and open Indo–Pacific. That is a major change of where we are politically and a major change of where we are economically.”

Concluding his speech, Emanuel told the crowd: “I look forward to the next three years working with each of your companies and promoting not only your commercial interests but, more importantly, our shared interests.” ■







Shared Interests and Values

The ACCJ honors 2021 Person of the Year Nobuyuki Hirano

Each year, the American Chamber of Commerce in Japan (ACCJ) honors those who have significantly impacted the global business environment in Japan with the ACCJ Person of the Year award. Former chair, president, and group chief executive officer of Mitsubishi UFJ Financial Group, Inc. (MUFG) Nobuyuki Hirano was selected as the 2021 Person of the Year not only for his work with MUFG, but also for his tireless efforts to promote better US–Japan business ties.

During a career spanning more than 40 years, and as chair of the Japan–U.S. Business Council from 2017 to 2021 and a current vice-chair of the Keidanren (the Japanese Business Federation), Hirano has helped to strengthen global business. ACCJ members and guests recognized this on April 25 at an in-person event held at Tokyo American Club and livestreamed to remote attendees.

The luncheon began with a VIP session where ACCJ leaders greeted Hirano, after which ACCJ Governor and Financial Services Forum Chair Andrew Conrad welcomed members and guests, and provided background about the award. ACCJ President Om Prakash delivered remarks, saying that, in Hirano, “we are extremely lucky to have someone who is so thoughtful—and very methodical—in how he approaches incredibly complex issues between the United States and Japan, and the entire world.”

Values and Principles

Taking the podium, Hirano expressed his deep honor to have been chosen for the award, and thanked the chamber for its

contributions as a member of the Japan–U.S. Business Council. “I appreciate the initiatives of all the ACCJ presidents—Christopher LaFleur, Sachin Shah, Peter Jennings, Peter Fitzgerald, and Jenifer Rogers—during my tenure.”

He then addressed the importance of shared values and trust by taking attendees back to the eighties—1983 to be precise—when he had arrived in New York City as a trainee at Morgan Stanley. The two years spent there for his secondment was the start of an extraordinary journey that would make Hirano a bridge between the United States and Japan and lead him to a position on the firm’s board of directors, which he accepted in March 2008.

Speaking of his fellow directors, he said, “They often joke, ‘Nobu, you are the first, and possibly the last, guy who has been elevated from unpaid trainee to Board member.’”

During the 2008 global financial crisis, MUFG made a \$9 billion strategic investment in Morgan Stanley—a move that Hirano says exemplifies the importance of shared values and principles between business partners. “This was a significant investment in its huge scale but, more so, in the sense that it is the only successful alliance between globally systemically important banks,” he explained. Worldwide, there are just 30 such banks, often called G-SIBs.

“But I believe it is more than this,” he continued. “James Gorman, now CEO of Morgan Stanley Investment Bank, and I agree that we actually have a similar corporate culture. I think it’s very important that our values and principles are similar, [in areas]

such as putting the client first, doing the right thing, and [having] an appreciation for long-term perspective.”

Returning to the present, Hirano noted that there has been a series of global crises in the financial world—roughly one per decade—which “have had a huge impact that exceeded most people’s expectations.” These include the collapse of Japan’s bubble economy in 1990, the Asian financial crisis of 1997, and the global financial crisis that sent shockwaves through the markets in September 2008 with the collapse of Lehman Brothers—the event which brought together MUFG and Morgan Stanley.

Today, we are on the precipice of another shockwave.

“The world is at a critical juncture and has entered a period of great uncertainty. We are undergoing a once-in-a-century period of dramatic change, which has been described as the era of VUCA, or volatility, uncertainty, complexity, and ambiguity,” he

At the 58th conference last fall—held virtually for the second year in a row due to the pandemic—a key topic of discussion was bilateral cooperation in the face of challenges from China.

“The struggle for supremacy between the United States and China is expected to be prolonged, while the economies of China and other countries are already deeply connected,” Hirano said. “There is consensus among business leaders that decoupling is unrealistic ... with a slight difference [being that] Japanese businesses tend to be more cautious about risk due to Japan’s high level of dependence on China and its close geographical proximity. Their US counterparts take a more opportunistic stand.”

While this difference in risk aversion exists, the only way to successfully deal with China, he proposed, is for likeminded countries to continue acting together based on their shared interests and values.

“WHETHER WE LIKE IT OR NOT, WE WILL BE FORCED TO REMODEL THE CURRENT SOCIOECONOMIC SYSTEMS THAT HAVE SUPPORTED CAPITALISM UP TO NOW.”

said, adding that we are witnessing a crucial moment in history with Russia’s invasion of Ukraine.

“A question we need to ask in today’s society is what role business leaders should play.”

Cooperation in China

As part of his work with the Japan–U.S. Business Council, Hirano has been involved in the Japan–U.S. Business Conference, an annual event first held in Tokyo in 1961. The conference makes recommendations to the Japanese and US governments as well as related organizations.

“Working with likeminded countries to reach out to China has also affected the private sector. That’s what I believe,” he said. “In fact, last autumn, we jointly invited guests from the EU government and European industries to the Japan–U.S. Business Council for the first time, to discuss rebuilding the global order as well as sustainability.”

While China may not change course over the short term, in the next few decades, he added, China may face socioeconomic challenges, such as the declining birthrate and aging population. “These might substantially undermine China’s economic growth potential,” Hirano explained. “History shows that the



distortions that occur alongside rapid economic growth are concealed until the growth slows. Once the distortions are revealed, they then force major structural reforms.”

Issues Uncovered

It has been more than two years since life as we knew it hit the brakes due to Covid-19. Hirano said the pandemic has not only disrupted the global economic order and increased political and geo-economic tension, but also revealed the global scale of the need to address sustainability issues. These include societal divisions, social inequality, and climate change.

“These problems,” he reasoned, “are largely due to globalization and excessive shareholder capitalism ... Whether we like it or not, we will be forced to remodel the current socioeconomic systems that have supported capitalism up to now.

“However, we have no clear idea, yet, how to solve many of the problems. This is partly due to differences in values and principles among conflicting nations.”

This is where he sees the great asset that is the US–Japan relationship, which is built on shared values and principles. It is important, he stressed, for US and Japanese business leaders to discuss how to chart and navigate a course on issues such as carbon-neutrality targets and convey their opinions to local governments.

On this issue, he believes, it is very important that there be cooperation with other countries in Asia, particularly members of the Association of Southeast Asian Nations.

In terms of Japan’s economy, the country’s future may be in jeopardy, Hirano suggested, unless drastic measures are taken to address the serious issues laid bare by the pandemic.

“To overcome this situation, the public and private sectors must act with a sense of urgency to make large structural changes to socioeconomic systems, in particular, and to revitalize and restructure industry through digitization and green transformation,” he stressed.

United by Trust

As a final point, Hirano noted that it is trust which has allowed the United States and Japan to develop such good relations and that, while close-knit cooperation between the governments is no doubt a huge part of this, he believes a major factor is the human connection between the people of both nations, strengthened over many years.

And it is this trust, which “cannot be seen by just looking at economic numbers,” that he considers to be an extremely important asset as we move into a future that is uncertain—not just for countries, but for business partners as well.

“I’d like to conclude by expressing my sincere hope that the business leaders of Japan and the United States will further deepen relations and our mutual understanding which, in turn, will strengthen the relationship—the partnership—between our two countries,” he said. “I also wish for the continued prosperity and success of this excellent institution, the ACCJ.” ■

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Chubu Walkathon

Annual event raises millions of yen for charity on a sunny day of food, friends, fun, and fitness in Nagoya

On May 22, more than 1,000 participants took part in the 31st Annual Chubu Walkathon International Charity Festival. This year's event took place on a beautiful Sunday in Nagoya's Meijo Park and was also livestreamed. More than ¥7 million was raised to support local charities. The Walkathon's mission is to improve the lives of the less fortunate by creating an opportunity to increase awareness, recruit volunteers, and raise funds at a family-friendly, international outdoor event. More than ¥177 million has been donated over 31 years, and 18 charities received funds in 2021. ■



Final Frontier

Former astronaut Naoko Yamazaki shares her vision for bilateral space cooperation and spaceports in Japan

The United States and Japan share a long history of collaboration in space, working together on projects such as the International Space Station (ISS) and the Artemis program, which aims to return astronauts to the moon by 2024 and can also be seen as a preparatory stage for human missions to Mars.

Cooperation between the two countries in the space industry is growing stronger and represents a great pathway for innovation in the bilateral relationship. A significant player in the space travel industry in Japan is the Space Port Japan Association (SPJ), which was established in 2018 and is attracting considerable attention on both sides of the Pacific.

SPJ co-founder and Representative Director Naoko Yamazaki joined members of the American Chamber of Commerce in Japan (ACCJ) on April 21 for an hour-long online discussion organized by the Chubu Aerospace and Manufacturing Committee.

Licensed to Fly

The accomplishments of Yamazaki, who participated as a panelist at the ACCJ Women in Business Summit in 2014, are impressive. Currently she is a member of the Committee on National Space Policy at Japanese Prime Minister Fumio Kishida's Cabinet Office. And as a former astronaut with the Japan Aerospace Exploration Agency (JAXA), she became the second Japanese woman to fly into space when she took part in an assembly and resupply mission to the ISS in 2010 aboard the space shuttle *Discovery*. She retired from JAXA in 2011.

Besides appearing in the media to promote the SPJ, Yamazaki occasionally meets with government officials in both the United States and Japan. For example, US Ambassador to Japan Rahm Emanuel greeted her and space startup leaders at the US Embassy, Tokyo, in February to discuss bilateral collaboration on the space front.

Direct Connections

During the April 21 webinar, ACCJ members learned that direct cooperation began with the signing of the 1969 US-Japan Space Agreement and has since blossomed into a relationship involving many US-made products. While a young organization, the SPJ has already established relationships with four regional governments interested in hosting spaceports. The projects include:

- HOSPO (Taiki, Hokkaido Prefecture)
- Spaceport Kii (Kushimoto, Wakayama Prefecture)
- Shimajiri Spaceport (Okinawa Prefecture)
- Spaceport Oita (Beppu, Oita Prefecture)

Other cities in Japan are also interested in such an investment in point-to-point suborbital space transportation hubs.

Besides sending future passengers to other planets, spaceports in Japan could become a launchpad from which to transport time-sensitive food and cargo to other locations on Earth. For example, Yamazaki pointed out, entrepreneur and investor Elon Musk proposed in 2017 a plan to use his SpaceX rockets to fly passengers from New York to Shanghai in just 39 minutes.

Supporting STEM

Yamazaki is recognized as a space policy expert not only in Japan but also in the United States. She was recently invited by the University of Pennsylvania (Penn) as a visiting fellow at the Perry World House, a center for scholarly inquiry, teaching, research, international exchange, policy engagement, and public outreach on pressing global issues. She is lending her expertise to Penn so that its students can develop and advance innovative policy proposals, and hopes to see more Japanese students benefit from the experience of studying abroad.

Finally, Yamazaki spoke about her involvement in the Japanese Rocket Society, where she chairs the Sorajo Committee, whose name means women in aerospace. She is a staunch advocate of inclusivity and gender equality in the Japanese aerospace industry—a goal very much aligned with the beliefs of the ACCJ and its member companies. Science, technology, engineering, and mathematics—or STEM—is a growing area of passion for this former astronaut, and we hope to see her and other members of the SPJ at future ACCJ events. ■



Julian Bashore
General manager and
representative director
MacDermid Performance
Solutions Japan K.K.

Chair
Chubu Aerospace
and Manufacturing
Committee



Yamazaki (right) with Soichi Noguchi and Stephanie Wilson in the ISS Destiny laboratory during the *Discovery* STS-131 mission.

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EVENTS



1. Tokyo Stock Exchange President Hiromi Yamaji spoke at the Fourth Annual ACCJ Shareholder Forum on June 7 at Tokyo American Club.
2. During a congressional delegation visit to Japan on April 13, (from left) ACCJ Vice President Douglas Hymas, ACCJ Chair Eriko Asai, US Senator Ben Cardin, US Senator Bill Hagerty, ACCJ President Om Prakash, ACCJ Governor Mari Matthews, and ACCJ Vice President Amy Jackson met to discuss economic security and strengthening the US-Japan economic partnership.
3. ACCJ President Om Prakash (center) along with ACCJ Economic Security Task Force Chair Arthur Mitchell and Vice-Chair Megumi Tsukamoto (far right) and Vice-Chair Shuichi Izumo (far left) presented the ACCJ Principles for Promotion of Economic Security to Minister Takayuki Kobayashi on April 21.
4. TELL Lifeline Services Director Vickie Skorji (right) and Outreach Coordinator Selena Hoy helped facilitate the two-day ACCJ-TELL Mental Health Summit, hosted as a hybrid event at Tokyo American Club on April 8 and virtual only on April 9.
5. The ACCJ-Kansai Executive Committee held its offsite strategy meeting at WeWork Midosuji Frontier in Osaka on April 1. It was a full house with 20 participants, including a special guest appearance by US Consul General Richard Mei.
6. ACCJ-Kansai members visited Food Bank Kansai on June 8 in support of their new initiative to convert food waste into compost and harvest pesticide-free, organically grown vegetables for donation to families in need.

7. From left: ACCJ Chair Eriko Asai, President Om Prakash, Executive Director Laura Younger, and Governor-Tokyo Victor Osumi visited Washington, DC, for the first DC Doorknock since before the pandemic from June 14 to 16.

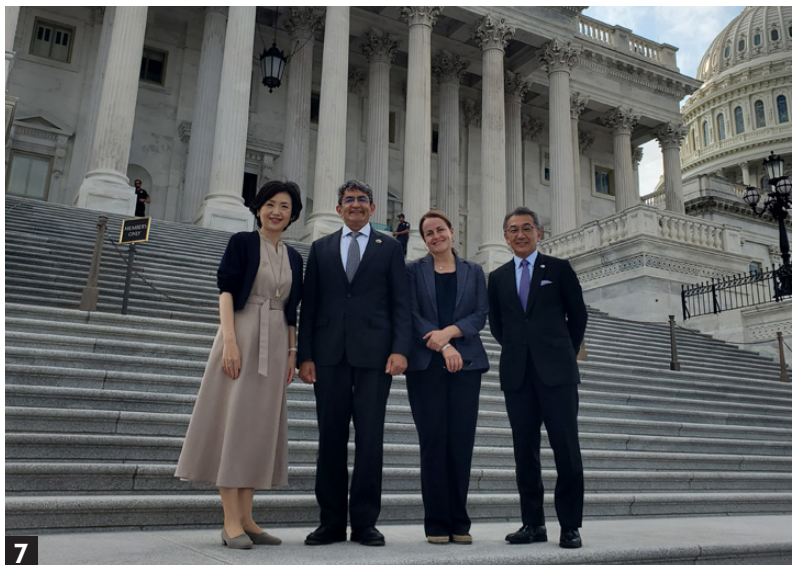
8. The ACCJ held its annual farewell evening for departing US Embassy liaisons on June 22 at Tokyo American Club. Government Relations Committee Chair Mark Davidson presented a certificate of appreciation to Karin Lang, departing Minister Counselor for Consular Affairs.

9. The ACCJ Marketing and Public Relations Committee welcomed journalist, writer, and investigator Jake Adelstein (center) on June 27 to speak about communications,

marketing, and reporting in Japan. Also pictured from left: ACCJ Executive Director Laura Younger, committee Vice-Chair Campbell Hanley, Chair Ted Katagi, Vice-Chair Deborah Hayden, and ACCJ President Om Prakash.

10. The ACCJ-Chubu Independent Business Committee kicked off its Ten Points on Business series at Coat of Arms Bar & Restaurant on May 14 with Bryce Conlan, president of H&R Consultants K.K.

11. Jason Morgan (right), formerly known as The Meat Guy, was the guest speaker at the second installment of the Ten Points on Business series on June 16.



Inflation!

Who's afraid of the big I? Not Japan.

A specter is haunting the world economy, the shadowy specter of inflation. Economists are fiercely debating from where it has come, politicians are busy blaming their opponents and, as always, the average citizen is left with no choice but to pay up. Yes, we all know inflation is lurking all around when you now must pay \$50 for your \$40 haircut that you used to get for \$25 when you had hair.

Japan stands out as the one economy in the world with a relatively benign inflation shock. Whereas in the United States consumer prices are up by almost nine percent from a year ago, Japan's consumer price index prints barely above two percent. This may come as a surprise, given the global nature of the inflation shock: excess money and credit, supply bottlenecks, the war in Europe, the surge in pent-up demand as the pandemic abates. Further, the global cost-push pressures—from rising energy, electronic component, and food prices—have been compounded by a falling yen.

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Oil and Oligopoly

In the United States, the price of oil is up about 60 percent in US dollars compared with the end of December. In Japan, the yen price of oil is up almost 85 percent. And yes, the United States is a net exporter of energy—and food—while Japan is one of the world's largest importers of energy—and food.

So, how come, despite greater and more severe exposure to global inflationary pressures, Japanese consumers are much less affected by the global inflation tsunami than their American counterparts?

There are two primary reasons:

- The government here is not afraid to intervene in markets to preserve the purchasing power of the people
- Japan's industrial structure is more cutthroat competitive

The net result of this seeming contradiction—government intervention going hand in hand with extraordinary competition—is a much lower inflation equilibrium here in Japan compared with what we get in the less interventionist and more oligopolistic US economy. There, a few producers are price-leaders and effectively control the market.

THAT JAPANESE POLITICAL LEADERS ACTUALLY CAN—AND DO—MOBILIZE FISCAL RESOURCES IN A TIMELY MANNER ALLOWS MUCH GREATER FLEXIBILITY FOR JAPAN'S CENTRAL BANK.

Let's start with the industrial structure. In the United States, of all the industries in the services and the manufacturing sectors—from hairdressers to pharmacies to steelmakers and semiconductor companies—on average, the top four players in each sector control about 32 percent of their respective total market. In contrast, here in Japan, the leading four companies command less than 15 percent. Clearpeak: Japan is much more fragmented and more competitive, while the US industrial structure has been consolidated and has, de facto, become more oligopolistic.

The net result is significantly lower price power for suppliers of goods and services in Japan relative to the United States. No matter how differentiated a product or service you offer in Japan, within days or weeks, a competitor will follow suit offering something similar but at a lower price point. Remember: every two weeks, a new soft drink is launched, and just about every 12–15 years, the equivalent of the entire central Tokyo grade A office supply comes onto the market. Good luck raising soft drink prices or rent.

Capitalism without Costs

There are, of course, complex reasons that excess competition has prevailed in Japan. The first investment report I ever wrote in Japan, back in the late 1980s, was entitled *Capitalism without Costs*. In it, I argued that corporate Japan effectively had no cost-of-capital constraint. In contrast to those in the United States, owners of capital in Japan simply did not hold corporate executives accountable to maximize return on capital.

Today, this still holds true, because just as the changes in capital stewardship and corporate governance have shifted private-sector capital allocation closer to the US model of

demanding higher returns, Japan's public sector intervention in capital markets has been stepped up dramatically. The Bank of Japan has purchased up to 10 percent of the TOPIX equity market as well as capped the cost of long-term debt at just about zero for almost a decade.

Whether this public sector provision of a cushion in capital markets is good or bad policy is subject to debate. But, for the purposes of trying to determine whether Japan does or does not face an inflationary threat, there is no question that the reality of a relatively low cost of capital has kept many marginal companies afloat. This, in turn, continues to restrict the price power of Japan Inc. in the domestic market. If your competitors don't have to care about delivering a proper return or profit, whoever raises prices is doomed to lose customers and market share.

Which gets us right back to the first reason Japan is not afraid of inflation: government intervention and de facto price controls.

When you analyze Japan's consumer price index, you quickly find that about one-quarter of the goods and services for which Japanese consumers pay are subject to government rules and regulation, i.e., de facto price controls.

Healthcare services and pharma are an obvious important example, as is education, much of transportation, and several staple foods. For the last of these, the Japan Agriculture Cooperatives, commonly known as the JA Group, plays a key part in expertly balancing fiscal support for producers while preserving the people's purchasing power.



Line in the Sand

The willingness to fight immediately against threats of inflation that undermine consumer well-being was just demonstrated by Prime Minister Fumio Kishida. In April and May, he drew a line in the sand for the consumer price of regular gasoline at ¥170 per liter and passed, in record time, a supplementary budget to fund this price-keeping operation.

Again, the contrast with US government priorities could not be greater. Not only does the Japanese government see its primary mandate as protecting its citizens from economic shocks, but it also has the necessary parliamentary control and supermajority to act decisively and quickly. It is both the willingness to act and the ability to act that, in my view, make Japan's parliamentary democracy and model of capitalism a worthy role model for the free world.

Be that as it may, practically speaking, the fact that Japanese political leaders actually can—and do—mobilize fiscal resources in a timely manner allows much greater flexibility for Japan's central bank. Where the de facto political gridlock in Washington makes it unlikely that government policies can be mobilized to cushion US consumers against the ills of inflation, here in Japan the government can be counted on. No wonder, then, that the United States must rely on the Federal Reserve as the lone fighter against inflation, while here the Bank of Japan gets plenty of backing from all the other parts of the policy toolkit available.

All said, the current strong surge in global inflation is very real and is definitely having a strong impact on Japan. However, the Japanese system is responding well to the challenges and is doing so on its own terms. Resilience to shocks is what Japan excels at and, in my view, the inbuilt systemic priority placed on preserving consumer purchasing power makes it unlikely that inflation will force another lost decade. ■

DIGITIZING WOMEN'S HEALTH

STARTUPS AND ENTREPRENEURS LEVERAGE TECH TO IMPROVE CARE AND EQUALITY FOR WOMEN IN JAPAN



In recent years, Japan has seen a boost in femtech. The portmanteau of female and technology refers to services using tech and products that help improve women's health. Government support and media coverage have enabled femtech business offerings to move from niche to mainstream. But how soon might the fledgling industry take off as it has in the United States and Europe? *The ACCJ Journal* spoke with experts to explore prospects for femtech in Japan.

In 2021, the word femtech was nominated for publisher Jiyu Kokumin Sha Co., Ltd.'s Word of the Year, an annual award for language best representing life in Japan over the previous 12 months. The word eventually lost out to phrases related to US-based baseball superstar Shohei Ohtani, who made a splash in 2021. Yet the nomination alone is significant.

Awareness of femtech has remained low in Japan since the term was first coined in 2016 by Danish entrepreneur Ida Tin, founder of period- and fertility-tracking app Clue. But 2022 might see that change.

A February 2021 survey by Sampo Himawari Life Insurance Inc. shows that only 1.9 percent of its 1,000 working female respondents recognized the term. Once it was explained to them, however, more than half said they were “interested in” or “hopeful” about the concept.

Fast-forward to year-end, and 47.5 percent of respondents said they were aware of the word femtech. Though this is positive for the market, a Statista survey of 3,068 girls and women carried out in December 2021 and January 2022 also shows a long way to go, as just 15.3 percent of those polled report knowing the meaning.

Raising Awareness

Still, the increase is welcome for industry players. They say the market can grow only with an uptick in public awareness of, and willingness to talk about, women's health—a topic that remains taboo in

“Women want to know how their body works, such as its rhythms and hormones, and [want] to live better lives ... exposure of the word and its different solutions will catch women's attention.”

Indeed, consumers have been quick to notice femtech offerings entering the market. Almost 80 percent of some 10,000 working-age women in Japan said they knew of at least one femtech product or service, according to a 2021 Statista poll. Most familiar were sanitary shorts (48 percent), cloth sanitary pads (47.9 percent), ovulation test kits (40.9 percent), period tracker apps (40 percent), and sleep bras (38.3 percent).

These products are the result of several early stage femtech startups that emerged in 2019 and went on to release products and services in 2020 and 2021 in what can be considered “the first movement of the femtech industry,” according to Tomoko Minagawa, founder of industry association Femtech Community Japan and a leading investor in the femtech domain.

Improving Gender Equality

Now many players in Japan, including enterprise companies, are starting to launch new femtech businesses, Minagawa explained. Their motivation has been boosted by policies from a national government that sees the femtech industry as one method of addressing the country's poor record in gender equality.

Japan ranks 120th among 156 nations in the World Economic Forum's 2021 *Global Gender Gap Report*,

“FEMTECH CAN EMPOWER WOMEN BY EXPOSING THE GAP BETWEEN THE NEED FOR, AND AVAILABILITY OF, FEMTECH PRODUCTS AND SERVICES, AND BY LEADING DISCUSSIONS ON FEMTECH'S NECESSITY AND ADVANTAGES FOR SOCIETY.”

Japan. Progress over the past 12 months has been attributed to the launch of new products and services, exposure in media and social media, events, and other activities that support conversations about women's health.

In March 2022, awareness-raising events Femtech Japan and Femcare Japan were held in Tokyo, while Japan Sports Week 2022, an industry event held in May, saw an area dedicated to femtech products and services supporting women in sports.

Promotion has already begun for Femtech Tokyo, an inaugural event to be held October 20–22 at Tokyo Big Sight, Japan's largest international exhibition center. It will usher in what are expected to be annual trade fairs, designed to welcome the general public and businesses interested in “solving various problems in women's life stages,” according to organizers.

“The term femtech is getting more recognition among women in Japan than ever before,” said Yoko Fukata, investment director at Sony Innovation Fund, which supports femtech startups in Japan.

far behind its G7 counterparts (which place between 11th and 63rd) as well as many of its Asian neighbors. The study, which tracks gender equality in four areas, evaluated Japan highly in health and education, but very low in economic participation and opportunity, as well as political empowerment.

Minagawa said the main reasons for Japan's ranking are the lack of:

- Support for women in balancing their professional and private lives
- Consciousness of the very deep chasm between the experiences of men and women

She added that femtech can empower women by exposing the gap between the need for, and availability of, femtech products and services, and by leading discussions on femtech's necessity and advantages for society.

Indeed, Minister of State for Gender Equality Seiko Noda, in her message on International Women's Day 2022, listed “promoting femtech”



Yoko Fukata
Investment director
Sony Innovation Fund



Tomoko Minagawa
Founder
Femtech Community
Japan



Kathy Matsui
General partner
MPOWER Partners



Yuko Kidoguchi
Operating officer and
head of communications
Bayer Holding Ltd.
(Japan)
Vice-chair
ACCJ Healthcare
Committee

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as a government measure to improve Japan's gender equality performance. Boosting women's health by supporting the femtech industry is part of its efforts for "the realization of a society in which women live with dignity and pride," one of the Japanese government's four pillars in its *Fifth Basic Plan for Gender Equality*.

Government support includes the Subsidy Project for Demonstration Projects for Femtech and Similar Support Services that distributed a combined subsidy of ¥150 million to 20 femtech companies in 2021. According to the Ministry of Economy, Trade and Industry, which runs the program, the goal is to prevent events, such as the unwanted turnover of working women (triggered by life turning points, including pregnancy, childbirth, and menopause); to improve the well-being of individuals; and to increase the diversity of human resources at companies.

A healthy femtech industry, therefore, supports not only a societal need, but an economic one.

Business Cost

Loss of productivity, resulting from improperly treated health issues experienced by women working in Japan, is estimated at ¥2.7 trillion (\$20 billion). According to Minagawa, the figure includes ¥323 billion (\$2.4 billion) from menstruation, ¥672 billion (\$5 billion) from fertility, and ¥1.75 trillion (\$13 billion) from menopause.

With employees' physical and mental health front of mind due to the acceleration of new work styles stemming from the pandemic, many companies are looking to the femtech industry for solutions to some of Japan's long-running problems.

Kathy Matsui, general partner of MPower Partners, Japan's first global venture capital fund focused on environmental, social, and corporate governance, told *The ACCJ Journal* that health and well-being has "become the priority" for more companies, particularly during the pandemic.

Startups have responded well. For example, lots of them have emerged that measure employee stress—now a legal requirement for companies in Japan. In the area of mental health support, companies are offering services, such as the outsourcing of care for children and elderly parents, she added.

Yuko Kidoguchi, operating officer and head of communications at life science company Bayer Holding Ltd. (Japan), which is active in women's health policy advocacy, is also seeing more companies supporting the health and well-being of staff. Some are providing education on women's health topics, including infertility treatment for women and men. Others are connecting female employees with gynecological care or providing financial support for women's health treatments.

It's all part of improving productivity and carrying out healthy management, Kidoguchi said.

Gradual Growth

With the needs and demand for femtech in Japan firmly established, what does the future hold? Japan's femcare and femtech market grew from ¥57.5 billion (\$428 million) in 2019 to almost ¥60 billion (\$448 million) in 2020, and further development of the market is projected to generate an economic impact of about ¥2 trillion (\$14.9 billion) in 2025, according to Statista.

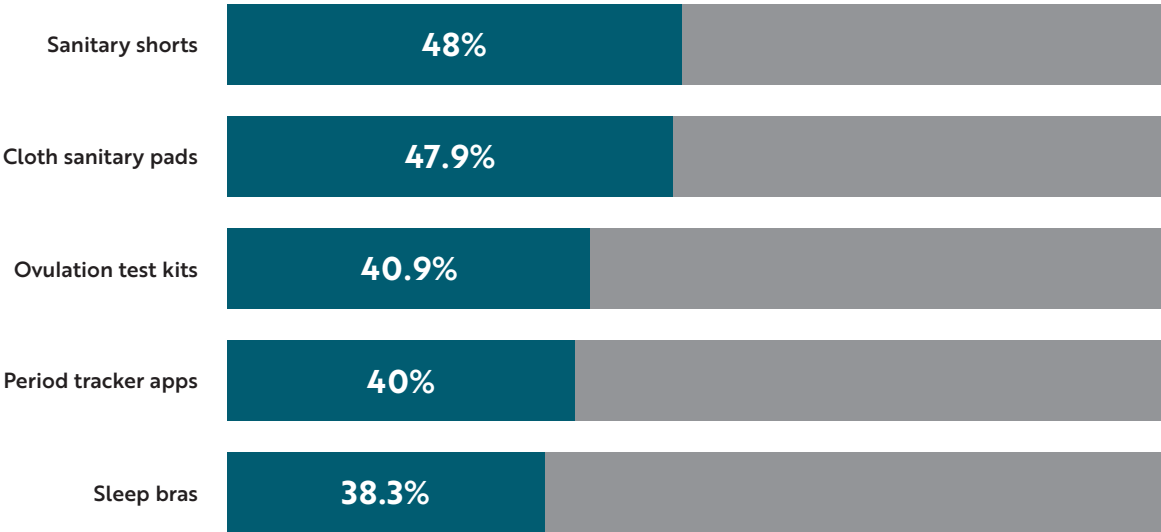
In global terms, though, Japan's market is tiny, with Asia accounting for only eight percent of the world's femtech companies. Compare that with North America, which is home to 55 percent.

Sony Innovation Fund's Fukata predicts that Japan's femtech market will "grow gradually, not exponentially," in part due to there being fewer female founders and investors than in the United States and some other countries.

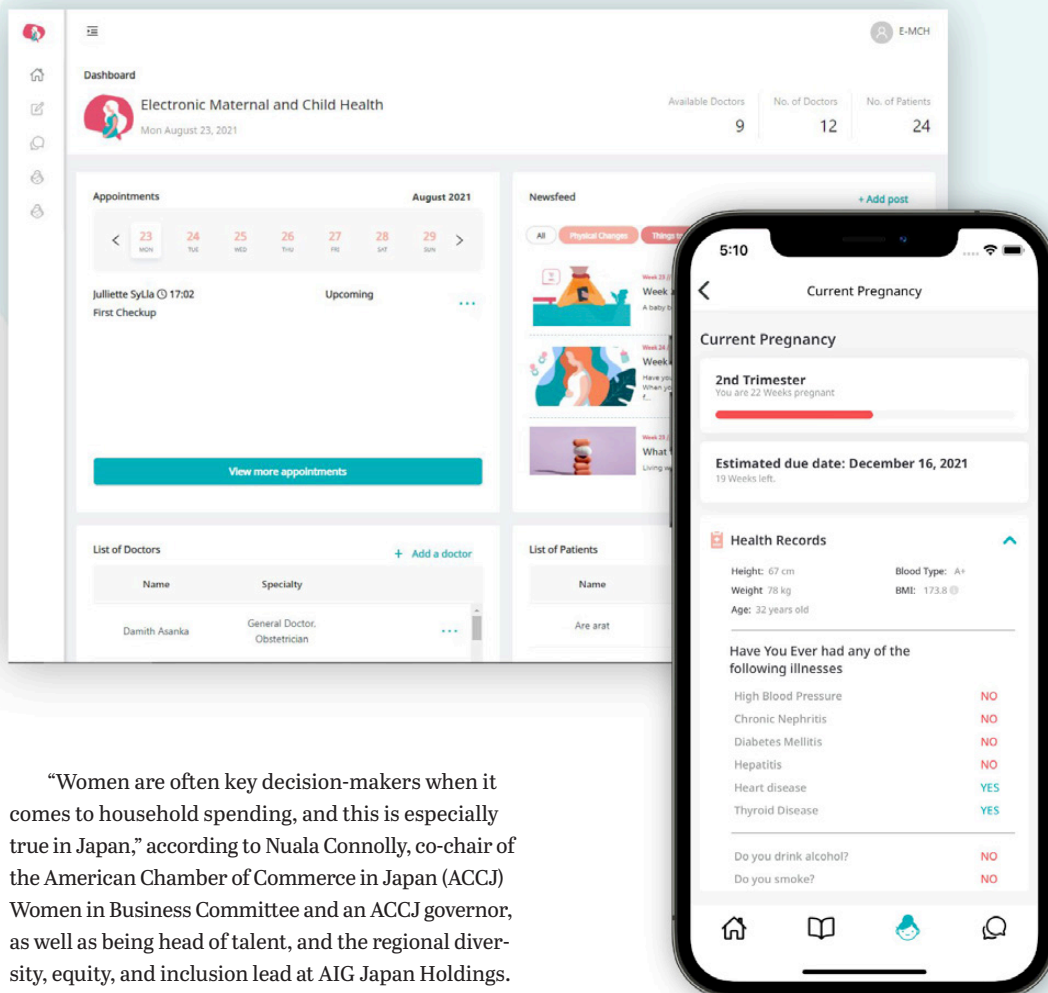
Still, the industry consensus is that women femtech founders can make a big impact in both this industry and the wider healthtech domain.

Awareness of femtech products or services among Japanese women

While knowledge of femtech has increased in recent years, analog items continue to dominate in Japan, according to a September 2021 Statista survey.



Source: Statista, Most commonly known female care and female technology (FemTech) products among women in Japan as of September 2021



Lanex is putting a modern spin on Japan's maternal and child-health handbook.

"Women are often key decision-makers when it comes to household spending, and this is especially true in Japan," according to Nuala Connolly, co-chair of the American Chamber of Commerce in Japan (ACCJ) Women in Business Committee and an ACCJ governor, as well as being head of talent, and the regional diversity, equity, and inclusion lead at AIG Japan Holdings. "Having women in leadership positions in startups and in femtech—and in every other sphere of business—means having leadership who represent this important consumer base and can innovate directly to optimally meet the needs of women. This, in turn, leads to the development of new products and markets, and boosts and elevates the overall economy."

Fukata also cites the general population's lack of deep understanding and the early stage of the industry as dampers on femtech growth, alluding to the fact that most femtech companies are focused on femcare, such as period underwear, rather than the technology aspect. She suggests this may be due to data that shows women are most concerned about period-related issues when it comes to women's health. Alternatively, it might be due to the ease with which consumers can see, touch, and use such products.

"I think [femcare is] the starting point. Once they get accustomed to using those products and get to know more about the industry and the solutions there are in the world, there will be more people who want to focus on using femtech in different stages of their life," she said.

Femtech Community Japan's Minagawa agrees that most companies are providing non-tech products and services, but she is seeing some movement in the tech space, such as apps to track period cycles or to chat remotely with medical experts, as well as expansion into fertility treatments and early detection and support of menopause symptoms.

E-MCH

One area of women's healthcare in Japan that is getting digital attention is the maternal and child-health (MCH) handbook, a printed booklet that can be obtained from a ward office or city hall which is used by doctors to track the results of pregnancy and post-birth health checks.

Lanex Co., Ltd. has developed an electronic version of the process—the E-MCH—an innovation for which the company won the From Japan and Beyond Award at last year's ACCJ Healthcare x Digital competition.

"We analyzed the actual trend of existing digital healthcare solutions and found that most were not directly applicable to maternal and child healthcare, so we came up with the idea to digitalize the Japanese MCH," explained software developer and project manager Boubacar Sow. "The E-MCH can play a significant role in tackling public health issues in both urban and rural areas of Japan. Our digital maternal and child healthcare system can collect and manage data from checkups during pregnancy, track the baby's development, and enable women to communicate efficiently with their doctors and monitor their pregnancies."

Sow said that femtech and supporting female entrepreneurship contributes to women's empowerment



Nuala Connolly
Head of talent and regional DEI lead
AIG Japan Holdings

Co-chair
ACCJ Women in Business Committee
and ACCJ governor



Boubacar Sow
Software developer and project manager
Lanex Co., Ltd.



Dr. Amina Sugimoto
CEO
Fermata Inc.

abbvie



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Femtech Community Japan hosted a US and Japanese members meetup on June 23 at Plug and Play Shibuya and via Zoom.

and helps to achieve gender equality. “Specifically in Japan, femtech will boost the role of women in bettering healthcare and related activities. Femtech can be seen as one of the pillars of achieving gender equality in healthcare and bringing equal opportunities to women.”

The Road Ahead

There remains a long way to go, however. A full-fledged femtech market includes all kinds of hardware and software, including:

- Medical devices
- Wearables
- Telehealth and digital platforms
- Therapeutic drugs
- Vitamins and supplements

added. But she aims to change that with Fermata’s mission “to turn taboos into triumphs” by facilitating more openness on women’s health.

“If people could talk about [women’s issues] more freely, the market would slowly start to grow—companies and startups would get ideas to come up with new products,” she believes.

The public would also benefit from understanding women’s bodies better, said Kidoguchi, a vice-chair of the ACCJ Healthcare Committee and the brainchild behind Bayer’s gynecological health education program in Japan. Inspired by the country’s limited female health literacy and access to gynecological care compared with what is available in other nations, the program has been delivered to more than 50,000 students in 200 high schools, from Hokkaido to Okinawa, over the past seven years. Such schemes that educate both men and women can act as

BAYER’S GYNECOLOGICAL HEALTH EDUCATION PROGRAM IN JAPAN ... HAS BEEN DELIVERED TO MORE THAN 50,000 STUDENTS IN 200 HIGH SCHOOLS, FROM HOKKAIDO TO OKINAWA, OVER THE PAST SEVEN YEARS.

These items support everything from menstrual and reproductive health to pelvic, uterine, and sexual health to wellness and longevity.

Reaching that stage might not be smooth sailing, though, according to Dr. Amina Sugimoto, CEO of Fermata Inc., a platform and ecosystem designed to help domestic and overseas femtech companies enter the Japanese market.

Pointing to a lack of understanding, she explained: “People think there is nothing in the market and try to come up with their own services. But the problem is the market is not there.” She added that it is unlikely the 90 percent of women in Japan who choose sanitary pads during their period would be interested in a device to predict fertility if it requires insertion.

Consumers are also largely unaware of, or uncomfortable discussing, what their personal health issues might be, Sugimoto

seeds for the future growth of Japan’s femtech market by creating more individuals who are open about, and understand, women’s health issues.

Minagawa said the current lack of understanding and cultural non-acceptance by investors, mainly dominated by men, is the structural impediment for investment in the femtech domain in Japan.

This was one driver for her to establish Femtech Community Japan, which connects investors, startups, enterprises, research institutions, government, and media for networking and discussion.

With the growth of such forums that support the development of an open conversation around femtech in Japan, it surely won’t be long before the term graduates from its current status as a year-end listing on language trends to being a topic of everyday conversation. ■

STATE OF MIND

HOW ARTIFICIAL INTELLIGENCE IS HELPING IDENTIFY MENTAL HEALTH CONCERNS FOR BETTER TREATMENT



For millions of people around the world who were already struggling with mental health issues, the past two-and-a-half years of the coronavirus pandemic have been a further trial. Isolation, a sudden shortage of opportunities to interact with friends or family in person, additional stresses in the workplace or the home, new financial worries, and difficulty in accessing appropriate mental healthcare have taken their toll, experts in the field told *The ACCJ Journal*.

However, in the battle against mental health complaints, this time of adversity has also served to fast-track development and adoption of a new tool: artificial intelligence (AI). While the technology may be relatively new to the sector, the potential is huge, according to companies that are applying it to assist physicians with diagnosis and treatment.

A Tool for Our Time

AI has come a very long way since the first chatbots appeared back in the 1990s, and early mental health monitoring apps became available, explained Vickie Skorji, Lifeline services director at the Tokyo-based TELL Lifeline and counseling service. And it is urgently needed, she added.

“When we have something such as Covid-19 come along on a global scale, there is inevitably a sharp increase in anxiety, stress, and depression. The mental healthcare systems that were in place were simply flooded,” she said.

“A lot of companies were already playing around in the area of AI and mental healthcare, but the pandemic has really pushed these opportunities to the forefront,” she explained. “If, for example, a physician is not able to meet a client in person, there are now ways to get around that, and there has been an explosion in those options.”

“REAL-TIME DATA THAT AUGMENTS THE CLINICIAN’S ABILITY TO IMPROVE CARE ... IS A CRITICAL COMPONENT NECESSARY FOR US TO MOVE TO A MORE EFFICIENT, QUALITY-DRIVEN, VALUE-BASED HEALTHCARE SYSTEM.”

Not every purported tool is effective, she cautions, and there are going to be questions around client confidentiality and keeping data current. The clinician must also become sufficiently adept at interpreting a client’s genuine state of mind, which might be different from the feelings that are communicated through the technology. On the whole, however, Skorji sees AI as an extremely useful weapon in the clinician’s armory.

Voice Matters

One of the most innovative solutions has recently been launched by Kintsugi, a collaboration between Grace Chang and Rima Seilova-Olson, engineers who met at the 2019 OpenAI Hackathon in San Francisco. In just a couple of years, the company has gone from a startup to being named in the *Forbes* list of North America’s top 50 AI companies.

Kintsugi has developed an application programming interface called Kintsugi Voice which can be integrated into clinical call centers, telehealth platforms, and remote patient monitoring applications. It enables a provider who is not a mental health expert to support someone whose speech indicates they may require assistance.

Instead of using natural language processing (NLP), Kintsugi’s unique machine learning models focus on signals from voice biomarkers that are indicative of symptoms of clinical depression and anxiety. Producing speech involves the coordination of various cognitive and motor processes, which can be used to provide insight into the state of a person’s physical and mental health.

In the view of Prentice Tom, chief medical officer of the Berkeley, California-based company, passive signals derived from voice biomarkers in clinical calls can greatly improve speed to triage, enhance behavioral health metadata capture, and benefit the patient.

“Real-time data that augments the clinician’s ability to improve care—and that can be easily embedded in current clinical workflows, such as Kintsugi’s voice biomarker tool—is a critical component necessary for us to move to a more efficient, quality-driven, value-based healthcare system,” he explained. The technology is already in use in the United States, and Japan is on the waiting list for expansion in the near future.

Chang, the company’s chief executive officer, is confident that they are just scratching the surface of what is possible with AI, with one estimate suggesting that AI could help reduce the time between the appearance of initial symptoms and intervention by as much as 10 years.

“Our work in voice biomarkers to detect signs of clinical depression and anxiety from short clips of speech is just the beginning,” she said. “Our team is looking forward to a future where we can look back and say, ‘Wow, I can’t believe there was a time when we couldn’t get people access to mental healthcare and deliver help to people at their time of need.’”

“My dream and goal as the CEO of Kintsugi is that we can create opportunities for everyone to access mental health in an equitable way that is both timely and transformational,” she added.

The Power of Data

Maria Liakata, a professor of NLP at Queen Mary University of London, is also the joint lead on NLP and data science for mental health groups at the UK’s Alan Turing Institute. She has studied the use and effectiveness of AI in communicating with the public during a pandemic.

Liakata’s own work has focused on developing NLP methods to automatically capture changes in individuals’ mood and cognition over time, as manifested through their language and other digital content. This information can be used to construct new monitoring tools for clinicians and individuals.



Vickie Skorji
Lifeline services
director
TELL Japan



Prentice Tom
Chief medical officer
Kintsugi



Grace Chang
CEO
Kintsugi



Maria Liakata
Joint lead
NLP and data science
for mental health
Alan Turing Institute

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The Kintsugi talk therapy app for mental health uses voice biomarkers to measure and predict well-being.

But, she said, a couple of other projects have caught her eye.

One is Ieso Digital Health, a UK-based company that offers online cognitive behavioral therapy for the National Health Service, utilizing NLP technology to analyze sessions and provide data to physicians. And last October, US-based mental and behavioral health company SonderMind Inc. acquired Qntfy, which builds tools powered by AI and machine learning that analyze online behavioral data to help people find the most appropriate mental health treatment.

“There has definitely been a boom over the past few years in terms of the development of AI solutions for mental health,” Liakata said. “The availability of large fora in the past 10 years where individuals share experiences about mental health-related issues has certainly helped in this respect. The first work that

different domains and platforms, such as Reddit versus Twitter.

“I think there is also some reluctance on the part of clinicians to adopt solutions, and this is why it is very important that AI solutions are created in consultation with clinical experts.”

Over the longer term, however, the outlook is positive, and Liakata anticipates the deployment of AI-based tools to help with the early diagnosis of a range of mental health and neurological conditions, including depression, schizophrenia, and dementia. These tools would also be able to justify and provide evidence for their diagnosis, she suggested.

To Assist, Not Replace

Elsewhere, AI tools will be deployed to monitor the progression of mental health conditions, summarize these with appropriate

AI TOOLS WILL BE DEPLOYED TO MONITOR THE PROGRESSION OF MENTAL HEALTH CONDITIONS, SUMMARIZE THESE WITH APPROPRIATE EVIDENCE, AND SUGGEST INTERVENTIONS LIKELY TO BE OF BENEFIT.

came to my attention and sparked my interest in this domain was a paper in 2011 by the Cincinnati Children’s Hospital. It was about constructing a corpus of suicide notes for use in training machine learning models.”

Yet, as is the case during the early stages of any technology being implemented, there are issues that need to be ironed out.

“One big hurdle is the availability of good quality data, especially data over time,” she continued. “Such datasets are hard to collect and annotate. Another hurdle is the personalization of AI models and transferring across domains. What works well, let’s say, for identifying a low mood for one person may not work as well for other people. And there is also the challenge of moving across

evidence, and suggest interventions likely to be of benefit. These would be used by both individuals, to self-manage their conditions, and clinicians.

Despite all the potential positives, Skorji emphasizes that AI needs to be applied in conjunction with in-person treatment for mental health complaints, rather than as a replacement.

“The biggest problem we are seeing around the world at the moment is loneliness,” she said. “Technology is useful, but it does not give people access to people. How we deal with problems, what the causes of our stress are, how can we have healthy relationships with other people—we are not going to get that from AI. We need to be there as well.” ■

SUSHI SINGULARITY

3D PRINTERS OFFER A VISION AND TASTE OF FUTURE FOOD—BUT WILL CONSUMERS EMBRACE IT?



Photo: Natural Machines

Is this a glimpse of the future of food? Japanese scientists and companies are developing 3D food printers to produce sushi, *wagyu*, and a host of other foods. They say the technology holds great promise for personalizing food to meet nutritional needs, reducing food waste, and even providing something to eat during extended space travel. “I think there’s huge potential. Food itself will probably change,” said Yamagata University’s Hidemitsu Furukawa.

The soft and wet materials-engineering scientist is developing a 3D food printer dubbed the Laser Cook that heats and hardens liquid food poured into a mold. He envisions the equipment being used in convenience stores within the next 10 years to prepare custom-designed food for consumers. He is even in initial discussions with Seven & i Holdings Co. Ltd., the owner of the 7-Eleven chain, about doing just that.

As Japan's population ages, the technology could also prove useful for feeding elderly people with specific nutritional needs or providing softer food for those who have trouble chewing and swallowing, Furukawa and other developers have noted.

The sushi and *wagyu* projects are still works in progress, and there are obvious questions about how receptive consumers will be to food that may seem industrial or artificially engineered. But already, 3D food printers are being used at universities, restaurants, and food companies in Japan and around the world. Developers predict they will become fixtures in household kitchens within a generation.

"We're trying to create a competitive food culture for the 21st century," observed Ryosuke Sakaki, who founded Open Meals, a venture backed by ad agency Dentsu Inc., which is pursuing seven projects that involve 3D food printers, including some that essentially squeeze sushi and *wagashi* (Japanese confections) out a nozzle.

THE TECHNOLOGY IS SOMETHING THE JAPANESE GOVERNMENT IS GETTING BEHIND AS WELL ... AND SOME DEVELOPERS ARE RECEIVING GOVERNMENT RESEARCH FUNDING.

Sakaki remarked that getting the taste and texture right have been huge challenges, and he has enlisted the help of sushi chefs in this regard. But he acknowledges that the results will never measure up to the sushi we are used to. "We'll never be able to match that," he admitted, adding that the fish or seafood portion of printed sushi may be crispier and may be placed on top of regular pats of rice shaped by a machine. "We'll need to think of it as a new kind of sushi experience," he concluded.

Still, Sakaki has high hopes. By year-end, Open Meals plans to hold an event at which printed sushi and *wagashi* can be eaten and the technology demonstrated. If it is well received, he hopes to open a restaurant serving the food in the not-too-distant future. The name? Sushi Singularity.

Mini Food Factories

These Japanese ventures aim to join a number of startups from Europe, the United States, and China that have taken the lead in this nascent business.

Food printers, which emerged 10–12 years ago, work in a variety of ways. The dispensing function operates like that of 3D printers with which we may be most accustomed. But, whereas the latter create plastic shapes, the function here causes capsules

of paste-like or liquid food to be squeezed through a nozzle to produce a three-dimensional shape that can be eaten or baked. The method lends itself to creating cookies, cakes, chocolates, and other confection. Some dessert shops have already started to display them.

But many machines can also handle mashed vegetables and even minced meat. The Foodini, a 3D food printer designed by Barcelona-based Natural Machines, comes equipped with capsules that users can fill with almost any sort of food, as long as it's relatively soft.

The technology is not as foreign or far-out as it might sound, Chief Executive Officer Emilio Sepulveda told *The ACCJ Journal*. And it is already widely used in food processing plants. "These printers use the same processes and same technology that major food brands use to create pasta or meat patties," he explained. "It's basically 3D printing, but no one calls it that."

Tackling Food Waste

The Laser Cook printer being developed by Yamagata University's Furukawa operates differently. It combines water with dehydrated, powdered food, which is poured into a vessel and then zapped with a laser to cook or harden it.

In this way, 3D printers can help reduce food waste, Furukawa and others have said. Instead of

discarding food that isn't sold at the supermarket—or the "ugly" vegetables that don't even get to the store, because they're not the ideal shape—it can be turned into powder and saved for future use. "If we think differently ... and convert food into powder, it becomes an on-demand item and there's little waste," Furukawa explained.

There's also potential here for use in space, he added. Transporting lightweight powder is easy. It doesn't require refrigeration and it can last several years. "So, when we go to Mars—a journey that could take two or three years—this kind of food could be used. You can make it just by adding water."

The technology is something the Japanese government is getting behind as well. One goal of the Cabinet Office's Moonshot Program is to reduce food waste, and some developers, including Furukawa, are receiving government research funding.

Personalized Nutrition

Another benefit, scientists and developers say, is that ingredients can be customized to meet individual nutritional needs. That might include vitamins and other supplements.

It could be particularly helpful, in Japan and other developed nations, for the growing ranks of



Hidemitsu Furukawa
Scientist
Yamagata University



Ryosuke Sakaki
Founder
Open Meals



Emilio Sepulveda
CEO
Natural Machines



Jennifer Perez
Venture capitalist
Future Food Fund

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elderly people, who may not get enough nutrition as their stomachs and appetites shrink. Producing softer food can also help elderly people who have dysphagia, or difficulty swallowing, a common problem for those with Parkinson's disease. "With this technology, you can make dense nutrition," Furukawa explained.

Athletes and soldiers could also benefit from specially designed food. Perhaps during disasters, the technology could also be used to feed people who lack provisions, developers say.

"The opportunity and potential to use this in hospital settings, in homes for the elderly, where consumers need very specific nutrients, and where nutrients must be provided at specific times—that's a huge market," said Jennifer Perez, a venture capitalist at the \$20 million Future Food Fund, established by online food delivery service Oisix ra daichi Inc., which invests in food-technology ventures.

"THE OPPORTUNITY AND POTENTIAL TO USE THIS IN HOSPITAL SETTINGS, IN HOMES FOR THE ELDERLY, WHERE CONSUMERS NEED VERY SPECIFIC NUTRIENTS, AND WHERE NUTRIENTS MUST BE PROVIDED AT SPECIFIC TIMES—THAT'S A HUGE MARKET."

So far, the fund hasn't invested in any 3D food printing companies, but Perez sees great potential. "This technology is a dream of the future, but it's starting to happen right now," she added.

Synthetic Wagyu

Japan is on the cutting edge in one particular area: developing "structured" synthetic meat that contains ripples of fat, blood, and sinew, just like the steaks we might buy at the supermarket.

While food printers have been able to process fresh and synthetic ground meat for some time, Osaka University bioengineer Michiya Matsusaki is spearheading research and working

with Shimadzu Corporation to develop chunks of synthetic, or cultured, *wagyu*, Japan's famous marbled beef.

The complicated process involves injecting stem cells from fresh meat into a gelatinous bath. The cells are then exposed to stimulating chemicals to differentiate them. Some become tiny muscle fibers just 500-microns wide, while others become tissue, such as fat and blood vessels.

The muscle fibers are then assembled to create tiny pieces of meat—72 strands, for example, create a tidbit just 5 millimeters x 5 millimeters x 1.5 centimeters. Matsusaki has not been able to do a taste test yet, because he hasn't received clearance from the university's ethics committee. But his team aims to complete the project for demonstration at World Expo 2025 in Osaka, where they hope to offer visitors tiny edible pieces of such printed *wagyu*.

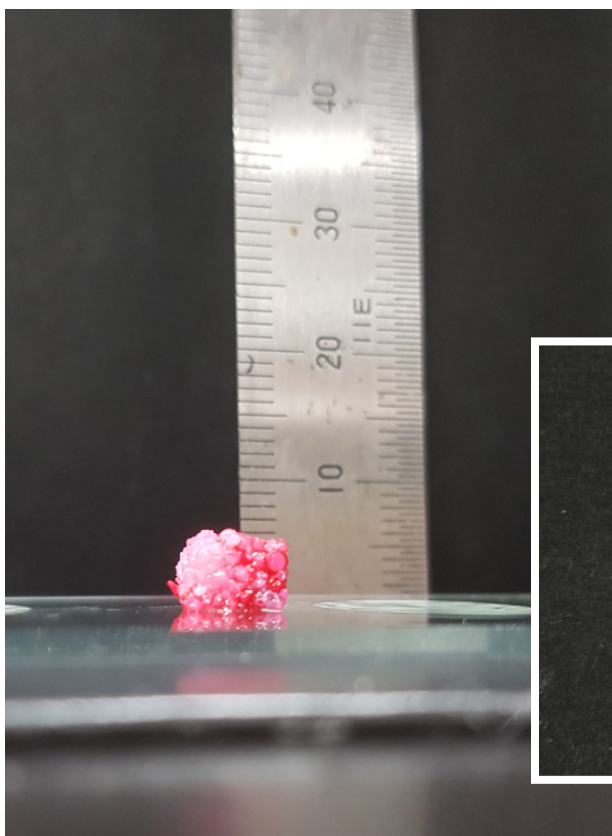
Matsusaki said he's received inquiries about his research from a number of companies around the world. "We're getting lots of interest from Singapore, Dubai, and the United States," he shared. "Companies that make synthetic meat don't have the technique to make this shape."

Key reasons for the project include concern about the environment and the possibility that the world will face a shortage of meat in the future, making it difficult to feed the growing population, Matsusaki explained. Increasing the number of cattle—and expanding grazing land to meet their needs—would lead to the destruction of more forests. And cows produce a lot of methane, a potent greenhouse gas.

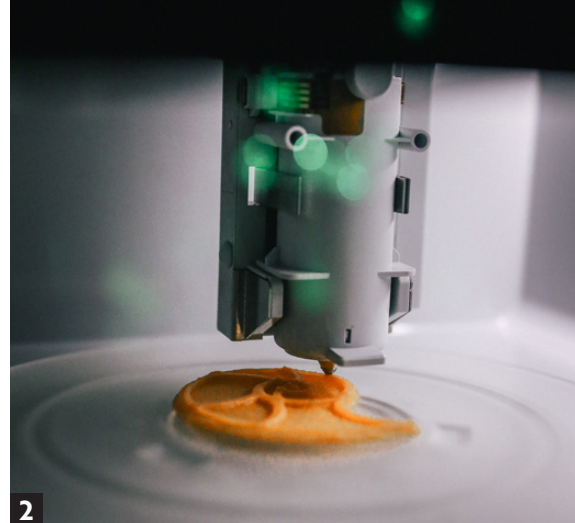
The equipment being developed with Shimadzu would allow consumers to manipulate the percentage of fat they want in their meat. "If you had one of these machines in your home, you could decide on the fat content and shape you wanted," he observed. "Press a button and it would be done the next day. That's the kind of future we're trying to create."

Very Analog

But how does such food taste, and will consumers go for it? Japanese are quite open-minded about robots and other applica-



Japan's famous marbled beef, *wagyu*, could become more sustainable thanks to 3D printing and Matsusaki's research.



Photos: Natural Machines



Foodini opens up a world of possibilities: 1. Chef plating a chocolate spiral; 2. Nautilus dish printing by Food Ink; 3. Hummus pot with carrots; 4. Icelandic Sustainable cod langoustine by Chef Viktor Andrésson of Lux catering.



tions of technology, but when it comes to food they have very high standards for quality, texture, taste, and freshness.

Tetsuya Nojiri, CEO of Oishii kenko Inc.—creator of the app that goes by the same name and who is not involved in 3D printer development—said he can see some positives in the technology, particularly for addressing nutritional needs of the elderly. However, he believes it won't appeal to most Japanese consumers, and that it would take many years to be accepted. "Most people want food that is natural, safe, and tasty," he stated. "That's very analog, not digital."

Aiming to contribute to health and healthcare issues through dietary management is the Oishii kenko app, which won the Empowering Patients Award and People's Choice Award at last year's American Chamber of Commerce in Japan Healthcare x Digital competition. The app's name means "tasty health" and it provides recommendations for nutritionally balanced, delicious meals using artificial intelligence and Big Data.

Nojiri suggested that, if the equipment to make 3D printed foods is fun and easy to use, he can see some consumers using it to make niche products such as chocolates and other confections. He can also see it being put to work in larger-scale settings, such as hospitals and universities. "These printers

have potential, but it's hard to imagine that they would be used to prepare food for the ordinary person," he added.

Perez of the Future Food Fund feels that more time and research is needed to gauge consumer receptivity. "Consumers are curious but, ultimately, it comes down to: Is the product going to taste good?"

Taste and texture are indeed very difficult, if not impossible, to replicate on a food printer. Chocolate and baked goods are easier on that score, but synthetic meat—or hybrid meat mixed with soy or other plant products—has generally proved disappointing. "It doesn't really taste like meat yet, so that's a problem," Matsusaki remarked.

Price, Speed, Scalability

The 3D printers currently being used have built-in limitations on what they can produce, Sakaki explained. "Food made with certain ingredients will harden and taste good, but [made with] others will not. There are also limitations on how you can design the food to come out. And it takes quite a while to make each piece, so that raises the price."

Yes, as with any new technology, price is an issue. Natural Machines' Foodini sells for about ¥800,000 at current exchange rates (\$6,000), although the company also offers less expensive subscription plans for set periods of time. The Laser Cook being developed by Furukawa costs roughly ¥1 million (about \$7,500). Other machines being developed in Japan, such as the *wagyu* and sushi printers, do not yet have price tags.



Michiya Matsusaki
Bioengineer
Osaka University



Tetsuya Nojiri
CEO
Oishii kenko Inc.



Suraj Gujar
Principal analyst for
disruptive technologies
Meticulous Research

Still out there making sure
people have enough food.



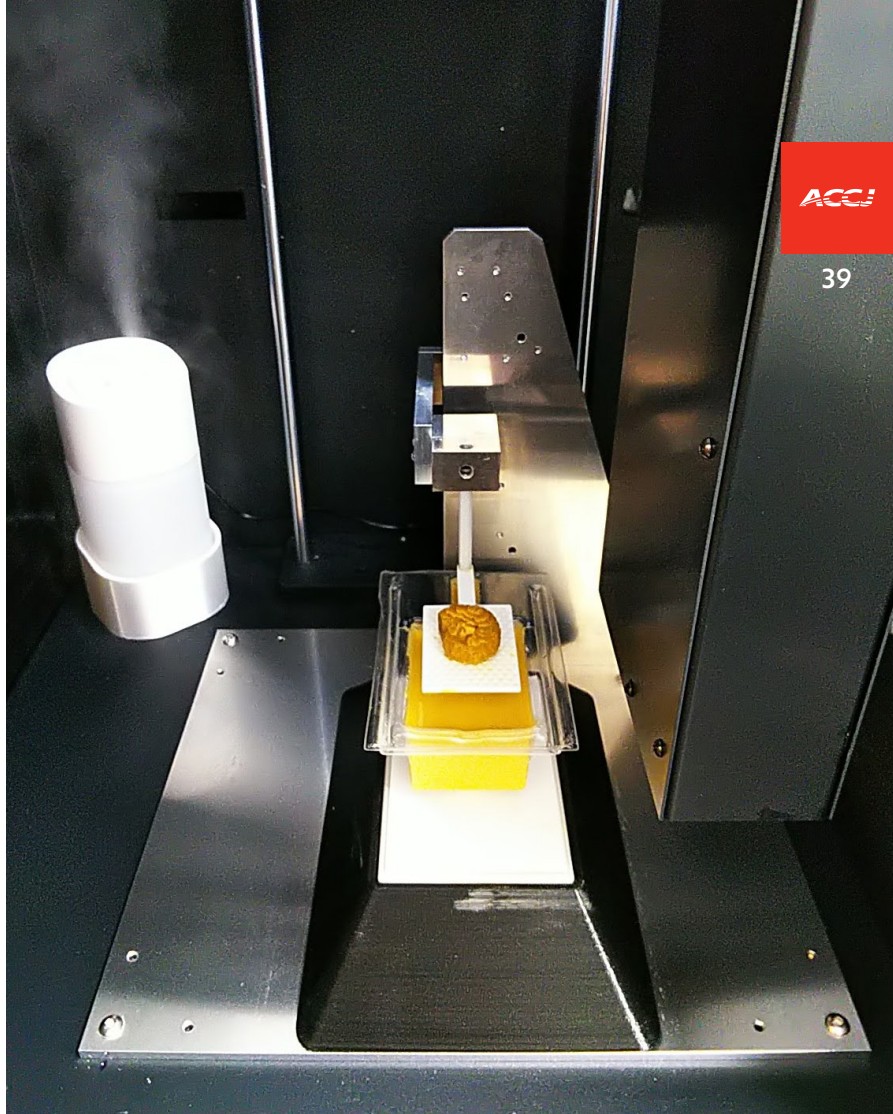
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The Laser Cook printer combines water with dehydrated, powdered food, which is poured into a vessel and then zapped with a laser to cook or harden it. Creator Furukawa sees potential for the device to reduce food waste and to support extended space missions.



Speed and scalability are other problems, according to Perez. Printing a simple round cake can take seven to 15 minutes, and making just one more complex structure can take 45 minutes to an hour. “When you compare that to what you can do on the standard factory line, it doesn’t make a lot of sense,” she said. “When you look at the logistics, it doesn’t quite work yet.”

On the flip side, once you have a successful product, it’s highly reproducible, Perez pointed out. And that data could be shared with other machines to create the same product on another continent—or in outer space.

that into the computer,” Gujar explained. “If it’s for a cake, I would be happy to have it. But if it’s for daily food, I’m skeptical.”

To counter negative impressions that printers generate “plastic food,” Natural Machines’ Sepulveda said that, most often, fresh ingredients are used with the Foodini, several dozen of which are already being put to work in Japan at food companies, universities, hospitals and restaurants.

To win the trust of consumers in Japan, it’s important to work with established food brands, Sepulveda noted. Natural Machines is working with Hankyu and Dentsu. “Japanese corpo-

DESPITE THE OBSTACLES, DEVELOPERS SAY GROWING CONSUMER AWARENESS AND CONCERN ABOUT ENVIRONMENTAL, HEALTH, AND SUSTAINABILITY ISSUES ARE MAKING THEM MORE RECEPTIVE TO THIS NEW TECHNOLOGY.

Suraj Gujar, principal analyst for disruptive technologies at Meticulous Research in Pune, India, sees 3D printers as remaining a relatively niche product used by bakeries, caterers, hotels, and restaurants—but not the wider public.

The equipment is far too expensive, hefty, and slow to catch on among ordinary consumers, at least for the foreseeable future, he offered. Also, most printers don’t have a cooking feature, so that involves another step, adding more time and work. And some can be tricky to operate, he added.

“The consumer has to be tech savvy, because if you want to print food, it means you have to give a command to a machine. And if you want a customized design, then you have to program

rates are super open and looking for partnerships that can bring them this extra value that they have not been able to develop on their own,” he added.

And demand in the region is on the rise: Asia has overtaken North America as the Foodini’s top market.

Despite the obstacles, developers say growing consumer awareness and concern about environmental, health, and sustainability issues are making them more receptive to this new technology. “Sustainability is getting more attention,” said Open Meals’s Sakaki, “including concerns about fish catch and resource use. 3D printing is one way to address that, so I think people will be receptive.” ■

From Disaster to Tech Hub

The bold ambitions of Japan's Fukushima Innovation Coast Framework

For his first-ever trip to Japan, in 2011, Warren Buffett chose to visit Iwaki City, Fukushima Prefecture. What attracted the world's most celebrated investor to a former mining community of some 300,000 residents far away from the bright lights of Tokyo? The Sage of Omaha came in person to show his support for Tungaloy Corporation, a leading maker of cutting tools. Tungaloy also happens to be owned and operated by a company led by Buffett. Just a few months after the Great East Japan Earthquake of March 11, 2011, devastated much of the surrounding region, Buffett stood in front of Tungaloy's Iwaki headquarters holding a sign that read, "Never give up, Fukushima!" The act underscored his commitment to the company, its employees, and the community that hosts them.

Tungaloy President Satoshi Kinoshita explained: "Companies are only as good as their people. The workers here in Iwaki City are bright, diligent, and ambitious. They are filled with creative ideas. This wealth of local talent on our doorstep—combined with very supportive local communities and government agencies—makes the case for investing in Fukushima so compelling."

Fukushima Reimagined

Iwaki City is just one of a string of towns and cities in the Hamadori area, Fukushima Prefecture's coastal region facing the Pacific Ocean which was hardest hit by the earthquake, tsunami, and nuclear disasters. Soon after the catastrophe, the Ministry of Economy, Trade and Industry (METI) began coordinating a wide range of efforts to revitalize this former disaster zone. METI's revitalization

initiatives were raised to a new level with the launch of the Fukushima Innovation Coast Framework in May 2017.

Under the framework, the ministry is attracting innovators in six core sectors through financial and other types of aid. The core sectors include:

- Decommissioning
- Robotics and drones
- Energy, environment, and recycling
- Agroforestry and fisheries
- Medical care
- Aerospace

Future Tech Hub

In the 11 years since the earthquake, recovery has focused on restoring businesses to their original locations in Fukushima through business and livelihood restoration efforts; but that doesn't provide a vision of Fukushima's future. The Fukushima Innovation Coast Framework aims for "creative reconstruction" by developing new industries in the prefecture's coastal region.

"As we attract outside companies, we also want locals to restart their businesses. True creative reconstruction is only realized once local companies successfully mesh with new partners and drive the creative cycle," explained Masami Miyashita, director of METI's Fukushima New Industries and Employment Promotion Office.

A Leg Up for Robotics

One of the cutting-edge research and development facilities is the Fukushima Robot Test Field. It offers experimental equipment and development facilities such as tunnels, bridges, and runways for aircraft to test the performance of robots for infrastructure inspection and communication towers for drones.

Sou Yanbe, growth manager of the venture capital Real Tech Fund, explained: "Test environments that can assess the durability of devices are indispensable for the commercial rollout of hardware such as robots and drones. But most startups can't afford to own and operate the facilities needed to conduct these tests. Robotics startups aiming for mass production should first consider setting up a base in the Hamadori area of Fukushima."



Warren Buffett (center) in Iwaki City in November 2011, holding a sign cheering on Fukushima.



The 50-hectare Fukushima Robot Test Field provides all sorts of real-world test environments critical to testing.

Big Hydrogen Plants

Take for example the small community of Namie, which has been reimagined as Hydrogen Town Namie and houses one of the world's largest-capacity hydrogen plants: Fukushima Hydrogen Energy Research Field. Sucking up an enormous amount of energy generated by solar panels, the field applies this solar energy to produce enough hydrogen fuel daily to power about 150 households or to fully charge 560 fuel-cell vehicles.

In response to the national government's 2050 Carbon Neutral Declaration, which is expected to encourage even further the introduction of renewable energy in Japan, Namie has declared itself a zero-carbon city, aiming to achieve virtually no carbon dioxide emissions by 2050. While this will promote the generation and use of renewable energy, the key to achieving their 2050 goal is found in the "create local, use local" strategy for clean Namie hydrogen produced at the Fukushima Hydrogen Energy Research Field.

Drones to the Disaster Response

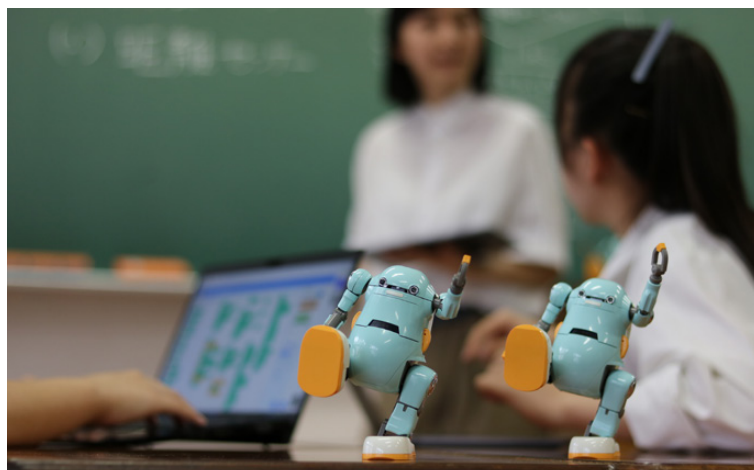
Meanwhile, the startup Terra Labo is addressing the other side of the coin: disaster preparedness. Investing just over \$2 million to build a research, development, and manufacturing hub next to Fukushima Robot Test Field, Terra Labo Chief Executive Officer Takahide Matsuura aims to

develop and commercialize long-range, unmanned drones by the end of 2023.

Matsuura envisions a disaster management system where fixed-wing drones capable of long-distance flight share images and 3D models generated from aerial surveying with a special analysis team, which then passes them on to government bodies.

"No other facility is so well equipped with not only an airfield and testing facilities, but also ancillary

Presented in partnership with



Children interact with the Aruku Mechatro WeGo robot.

facilities," Matsuura said, noting how critical the facilities are to his vision. "This makes it ideal for a development-centered company. It must not have been easy to secure the site."

Engaging Education

But it's not all billionaires, venture capitalists, and entrepreneurs. The next generation of Fukushima residents is just as involved. In the classroom of a local school, children's eyes light up when one palm-sized robot bows. The robot attracting their attention is the Aruku Mechatro WeGo, designed to help children learn programming.

Classes such as these are held regularly in Fukushima for elementary and middle school students with the hopes that some will grow up to be the innovators of the future. And perhaps, in the years to come, one of Buffett's successors will visit Fukushima and be inspired by local creativity and entrepreneurship to invest more in the vibrant Fukushima of the future. ■



Fixed-wing drones will scan disaster-struck areas.



Learn more about the Fukushima Innovation Coast Framework
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Bank of America	IHG ANA Hotels Group Japan	PwC Japan
Bayer Yakuhin, Ltd.	IQVIA	Qualcomm Japan LLC
Boeing Japan K.K.	Johnson & Johnson Family of Companies	Randstad K.K.
Bristol-Myers Squibb K.K.	KPMG	Robert Half Japan
Carlyle Japan LLC	Kraft Heinz Japan	Robert Walters Japan K.K.
Caterpillar	Lenovo Japan Ltd.	Salesforce Japan Co., Ltd.
Chevron International Gas Inc. Japan Branch	Lockheed Martin	Squire Patton Boggs
Citigroup	Mastercard Japan K.K.	State Street
Coca-Cola (Japan) Co., Ltd.	McKinsey & Company, Inc. Japan	Stryker Japan K.K.
Cummins Japan Ltd.	MetLife	Thomson Reuters
Deloitte Touche Tohmatsu LLC	Microsoft Japan Co., Ltd.	Uber Japan Co., Ltd.
Delta Air Lines, Inc.	Mitsuuroko Group Holdings Co., Ltd.	Visa Worldwide (Japan) Co., Ltd.
Discovery Japan, Inc.	Morgan, Lewis, & Bockius LLP	The Walt Disney Company (Japan) Ltd.
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