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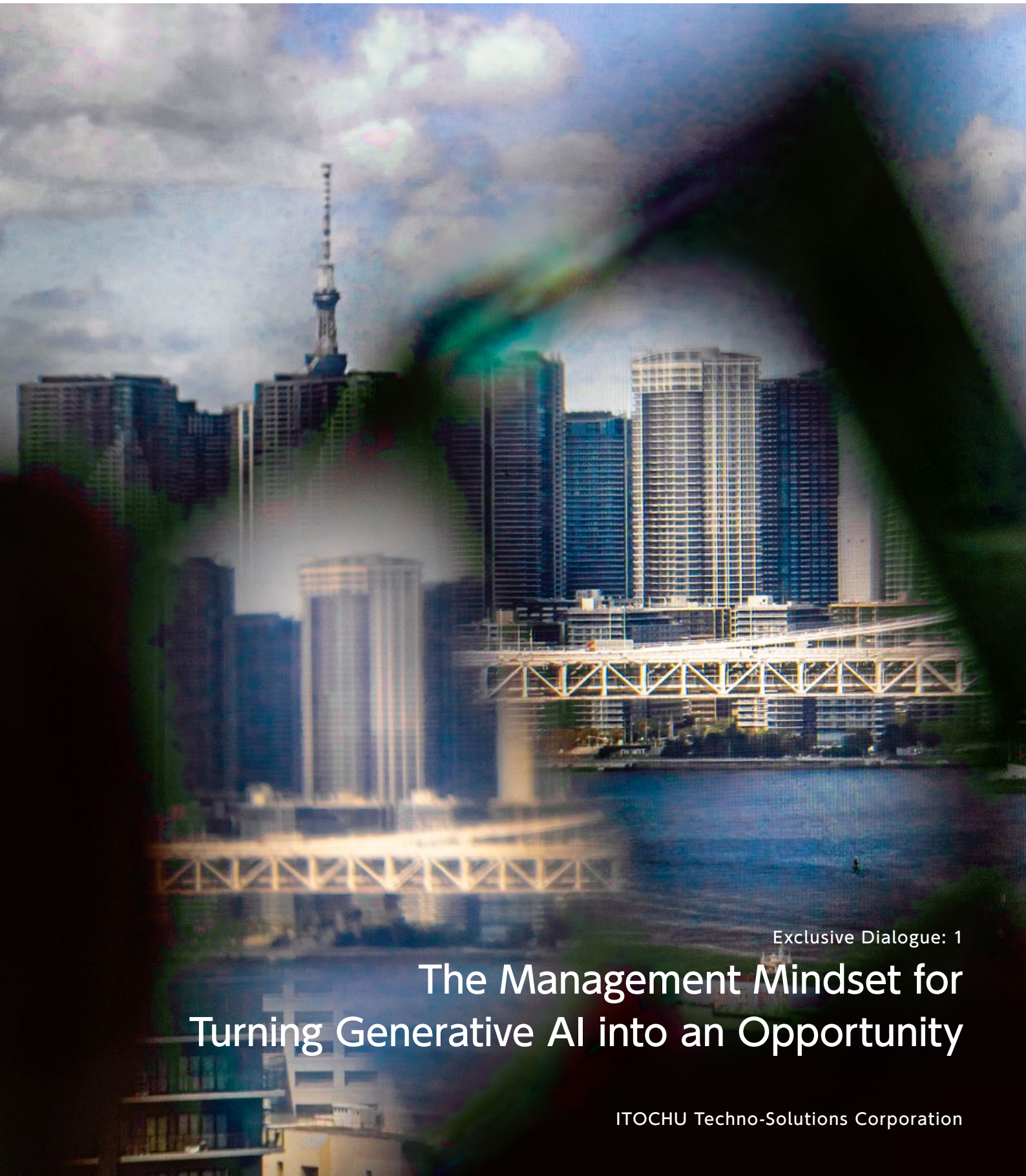

Exclusive Dialogue: 1

The Management Mindset for Turning Generative AI into an Opportunity

ITOCHU Techno-Solutions Corporation

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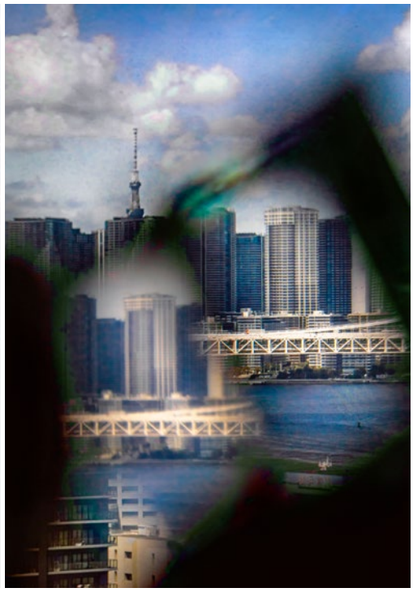


C O N T E N T S

Cover Photo

Cover photo by Masataka Nakano

Born in 1955, photographer Masataka Nakano has won numerous honors, including the Photographic Society of Japan’s Newcomer’s Award for *TOKYO NOBODY* and the Kimura Ihei Award for *Tokyo Windows*.

The mindset to look at society from new perspectives is a constant, vital need in every facet of life, not just business. The photo on the cover is a shot of Tokyo through a prism—a fairly common photographic approach. While I do sense limitless potential in how AI could help people explore new methods of expression, we can also find inspiration in the wisdom of those who came before us. Seen through today’ s lens, those approaches from past generations can feel unexpectedly fresh. Inspiration awaits in overlooked perspectives.

■ Exclusive Dialogue: 1

The Management Mindset for Turning Generative AI into an Opportunity

President & CEO
ITOCHU Techno-Solutions Corporation
Tatsushi Shingu

Professor, Waseda Business School
(Graduate School of Business and Finance)
Akie Iriyama

Generative AI, a technology that continues to make rapid advances and expand its reach, is starting to reshape the business landscape. Observers often say that Japanese companies lag behind their peers abroad when it comes to adopting and utilizing AI. In the eyes of management scholar Akie Iriyama, the emergence of generative AI represents a major opportunity for the country. CTC President & CEO Tatsushi Shingu, too, sees the present moment as a potential springboard for growth—and he is now steering the company toward harnessing the power of AI. What do companies and their leaders need to be aware of in this new AI era? What kinds of transformation will companies need to pursue? Professor Iriyama and President Shingu sat down for an energetic discussion of the topics at hand.

Coverage and text by Yuki Kondo

Tatsushi Shingu
President & CEO ITOCHU Techno-Solutions Corporation
A graduate of the Faculty of Science and Engineering at Waseda University, Tatsushi Shingu joined ITOCHU Corporation in 1987. In 2016, he became CAO of ITOCHU International Inc. (New York) and President of ITOCHU Canada Ltd. After serving in several other roles, including President of ITOCHU Corporation's ICT & Financial Business Company and Managing Executive Officer at ITOCHU Corporation, he assumed his current position in 2024.

The Advent of the Generative AI Age: An Opportunity to Seize

——With generative AI evolving and spreading at an incredible pace, the business environment is in the midst of transformative change. To get us started, could you briefly introduce yourselves and tell us what is going through your minds at this pivotal juncture?

Iriyama: Sure. Aside from my main line of work as a university professor in management, I also serve as an outside director and advisor to several companies and provide support to AI-related firms. I have connections with a variety of businesses big and small. AI has become a big issue in so many different settings and dimensions. Part of my job now is to take stock of what I see going on in that context and share insights with wider audiences. Being able to sit down today with someone like President Shingu, who knows so much about AI, is an exciting opportunity for me.

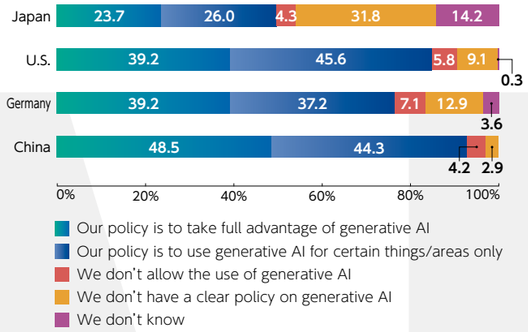
Shingu: I became President & CEO of CTC in April 2024. Before that, I had spent nearly four decades at ITOCHU Corporation. When ITOCHU made a takeover bid (TOB) for CTC in 2023, I was the managing executive officer in charge on the ITOCHU side. Now, in my role leading CTC, my focus is on deepening collaboration with IT-related companies across the ITOCHU Group and providing our customers with a diverse range of value.
CTC's business centers on bringing cutting-edge North American technologies to Japan and helping them take root here as quickly as we can. Right now, AI stands alongside security, data business, and the cloud as one of our four core focus domains. We are working right now on two fronts. One is how to provide AI-related services and products to customers; the other is how to use AI to streamline our own internal operations.

Iriyama: For major SIers, which have already done great business to this point, the advent of generative AI is thrusting software development into a new phase. The impact of that shift is going to be huge, I imagine. President Shingu, do you see the current situation as a problem or an opportunity?

Shingu: I would say I see it more as an opportunity. Observers note that Japanese companies are "behind the times" in AI adoption while businesses in other countries charge ahead, but I think momentum has been picking up recently here at home. More and more people are reaching out about AI-related capital investments. But once the initial wave of AI implementations settles, the roles SIers can play might narrow a bit. We are getting ready for what comes next, always looking ahead. (Figure 1)

Figure 1
Corporate policies on generative AI use (FY2024 survey, by country)

Compared with the United States, Germany, and China, only about 50% of Japanese companies say they have established a policy on generative AI use.



[Source] Ministry of Internal Affairs and Communications, "2025 White Paper on Information and Communications in Japan"

From "Public AI" to "Private AI"

——As the momentum behind AI adoption builds in Japan, what technical developments will be key in making AI even more prevalent across the business landscape?

Iriyama: The president of a major IT company recently said something that was interesting to me: "Humanity has only fed about 1% of its data to AI." The remaining 99%? All that data is within company organizations. The training for today's leading models—OpenAI's ChatGPT, Google's Gemini—relies mostly on publicly available digital data on the internet. That makes these platforms what you might call "public AI." That public foundation is powerful, even by itself.

Akie Iriyama
Professor, Waseda Business School (Graduate School of Business and Finance)
Graduated from Keio University Faculty of Economics and then completed a master's program at the Keio University Graduate School of Economics. After working in consulting at Mitsubishi Research Institute, Akie Iriyama enrolled in the doctoral program at the University of Pittsburgh's Joseph M. Katz Graduate School of Business and obtained his Ph.D. in 2008. He served as an assistant professor at the State University of New York at Buffalo Graduate School of Business until 2013 and then became an associate professor at the Waseda Business School (Graduate School of Business and Finance), later assuming his current role of professor in 2019. Specializing in management, Professor Iriyama has published numerous papers in major international journals of management studies and works to engage audiences as an active presence in the media.

But the real deal is all the non-public information assets that enterprises around the world have in their possession. The way I see it, the utilization of generative AI will move on to the next stage as enterprises start training models on their own data to create company-specific "private AI." Big cloud operators, which are now beginning to offer secure, private environments in the cloud, clearly already have their sights set on the shift to that stage. Once we enter the "private AI" era, the performance gaps separating companies will widen significantly.

Shingu: That is exactly where we are seeing lots of business activity right now. When companies get to thinking about training AI on internal data, the question that arises is about location—where can we keep this data safe? Private, cloud-based environments offered by the major cloud operators you were mentioning are one potential solution. Large-scale corporations might also choose their own on-premises servers.
Another newly emerging option is a kind of service that North American server manufacturers are pushing. It involves placing the actual physical server on-site at a customer location and then applying usage-based billing; you could liken it to the old "medicine deliverers" who would leave a medicine box and charge only for what people used.

Iriyama: I see—leave the box and only take payments for what people took out of it. It's the same setup. I had no idea that companies were already using that angle.

Shingu: There are some, indeed. Every approach a company takes to training AI on internal data—and there are many to choose from—has its pros and cons. With IT departments at so many firms wrestling with what to do, demand is strong for services where providers offer the optimal solutions. A company incorporating AI also needs to have a solid IT infrastructure in place, and we are seeing quite a few requests for help at that step, as well.

How AI Fosters "Ambidexterity"

——Professor Iriyama, you emphasize the importance of "ambidexterity" for companies: balancing "exploration," or combining distant, diverse knowledge, with "exploitation," which is about deepening promising knowledge or ideas. From that perspective, how do you think AI will change company management?

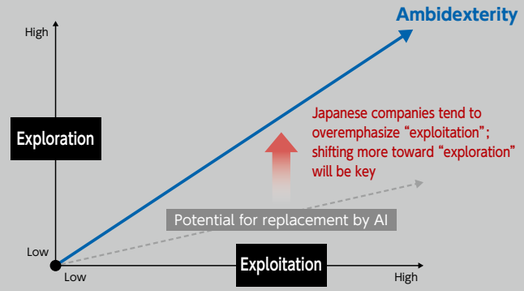
Iriyama: Generative AI is a once-in-a-generation opportunity for Japanese firms, I believe, but I am sure we will eventually start seeing big divides between those who can leverage AI effectively and those who cannot. The key is ambidexterity.
People tend to say that Japanese companies come up short in the innovation dimension. One of the essential elements of innovation is exploration, or the process of gathering far-reaching, far-flung knowledge and recombining it. It also requires exploitation—deepening knowledge and ideas with exciting potential and turning them into revenue. The heart of ambidexterity is the focus on finding the optimal balance between those two components. Many Japanese firms lean too heavily toward exploitation, though, because it leads to near-term business results. Exploration, on the other hand, seems wasteful at first glance and also ends in failure.

AI is incredibly good at exploitation. It excels in polishing what shows promise and efficiently leading users to the right answers. Since people can basically leave the exploitation side to AI, they can now reallocate their effort toward exploration. If that happens, companies will be in much better position to innovate. Combining that newfound ability with Japan's long-standing strength in on-site work should help companies recapture a lot of their competitiveness, I think. On top of that, another factor that makes now such an opportune time to adopt AI is Japan's shrinking population. I see a real opportunity for Japan in both of these senses. How do you see the situation? (Figure 2)

Figure 2

Ambidexterity

Professor Iriyama argues that "ambidexterity" is essential for corporate growth. In his view, AI has enormous "exploitation" capabilities.



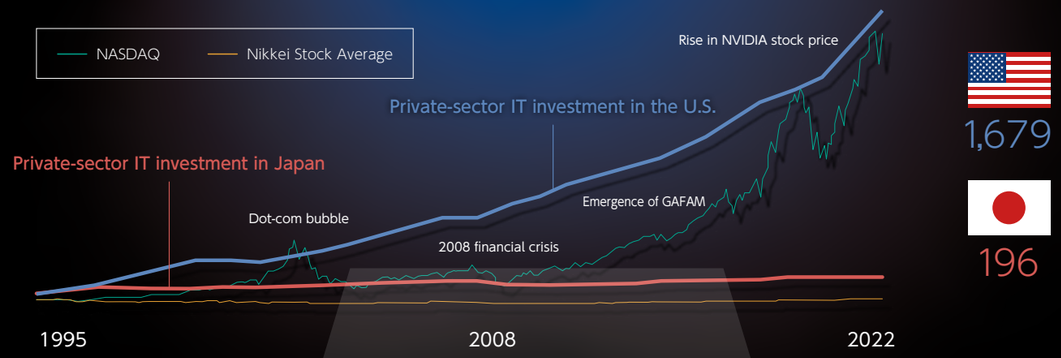
[Source] Akie Iriyama, *Management Theories of the Global Standard*

Shingu: I agree with the idea that AI presents Japan with a chance to grow again, but I also have concerns. For a long time, I have been asking myself why the gap in economic growth between Japan and the U.S. has widened so much in the last few decades. And the answer I came up with is how the two countries invest in IT. If you look at Japanese and U.S. private-sector IT investment over the past 30 or 40 years, the divergence in those figures basically lines up with the gap between the Nikkei Stock Average and NASDAQ. (Figure 3) So what can you take away from that? It shows you how Japanese companies have under-invested in IT, downplaying the importance of investment in the area and seeing it as a cost. Japan might miss out on the AI opportunity, I think, unless executives abandon that mindset and make a commitment to investing actively.

Figure 3

Private-Sector IT Investment and Economic Growth in Japan and the U.S.

This graph illustrates trends in private-sector IT investment in Japan and the U.S. from 1995 to 2022. Relative to a baseline value of 100 for 1995, the investment amounts in Japan and the U.S. for 2022 were 196 and 1,679, respectively—and these trajectories in IT investment generally correlate with the growth in the Nikkei Stock Average and NASDAQ, which are stock indexes in the two countries.



[Source] Created based on Ministry of Internal Affairs and Communications, "2024 White Paper on Information and Communications in Japan"; NASDAQ Composite Index; and Nikkei Stock Average trends

Iriyama: Absolutely. I often say that what Japan lacks most are CHROs and CIOs. Human resources and IT are both money- and time-intensive—and the results are hard to see, too. You might realize that an investment in human resources was a good move or see an IT investment pay off over the course of 10 or 20 years. But in the short term, those types of investments appear to have minimal positive effects, if any at all. That explains why so many companies see IT investment as just another cost. It all comes down to whether management itself can recognize and act on the importance of IT investment—or whether the company has a CIO who makes IT investment a focal point.

Shingu: In that sense, I think COVID-19 pandemic was a turning point. When the pandemic hit, remote-work environments became essential parts of business operations basically overnight. That made it obvious to many executives just how vital IT investment is. As an SIer, we really had a direct sense of the pandemic's impact. Now, with AI having entered the picture as the next big game-changer, I think having leaders who can actually move is going to separate the companies that succeed and those that struggle.

Differences Between Japan and the U.S.: National Character and Governance

——You were talking about how Japan and the U.S. see IT investment differently. Where do you think those differences come from?

Shingu: When it comes to Japan and the U.S., I think national character plays a role. Japan has lagged behind the rest of the international community in AI, as we have been talking about, but also in cloud adoption. Japanese people tend to be cautious about bringing in new things. Americans, on the other hand, embrace the new. That difference, which has big implications, shows up in policy, too. You can find one example of that in San Francisco, which I visit pretty often. In 2024, Waymo—the self-driving taxi service originally developed by Google—launched commercial operations there with approval from the state of California. Japan is moving into field testing for private-sector self-driving cars, but I feel like it will be a while before we see extensive permission for using the cars on public roads. While ensuring safety obviously takes top priority, I think there could be more proactive moves.

Iriyama: I agree that Japan moves slowly. To break that pattern, one thing I think Japan needs more of is greater private-sector engagement with government: lobbying. In the U.S., lobbying is huge; there are so many lobbyists with so much influence on politics. Some Japanese startups do engage with policymakers, leveraging those active efforts to develop their businesses. That kind of engagement is something I think more companies need to pursue: explaining how their business benefits society and building understanding in the government sphere. That mindset is going to be so important in the coming years, I think.

Shingu: Right. Japan might need to do a better job of cultivating that kind of resolve: private-sector companies embodying a frontier spirit and working to shape society and policy to advance their business.

Iriyama: Indeed. Another issue that relates to Japan's reluctance to invest in IT is corporate governance. In Japan, top executives at listed companies and much of the rest of the corporate community serve fixed terms. What that naturally leads to is a focus on the duration of that specific term, not past it. For leaders, it can be hard to see their responsibilities extending beyond their times in office. But management and IT investment both require 10- and 20-year horizons. Personally, I think fixed terms make it harder for executives to have a long-term perspective. When I say that, though, people often suggest that having the same person in the top executive role for a long time could create an autocracy. One person wielding too much power is a situation that certainly does happen at some companies—and that is precisely why governance matters. Support good leaders for longer; replace bad leaders quickly. That is what corporate governance is all about. Companies need governance that enables capable leaders to manage with a long-term view, a setup that fosters healthy IT investment.

Shingu: Agreed. A company's ability to invest in IT has a lot to do with governance. Another factor is the constant pressure of internal standards—how much of a return you need to earn from an investment of a given scale—which can make long-term strategic investments difficult. Japanese companies need to take a long, hard look at that kind of practice, I think.

"Before AI" and "After AI"

——The wave of AI adoption is bound to transform the ways people work. What should executives keep in mind as they steer internal operations?

Iriyama: Kazuhiko Toyama, the former CEO of Industrial Growth Platform, Inc., writes in *The Demise of White-Collar Work* that work will take on a "smile curve." In that situation, the value levels are a smile-shaped parabola: higher in the upstream and downstream areas

but lower in the midstream portion. Upstream is where management lies, and downstream is where actual on-site operations take place. Linking those two sides is the midstream section, which includes the kind of work that AI excels at—and could serve as a replacement. The key for companies is to shift people who are in midstream roles now. Since the upstream categories can only hold a limited number of people, the most effective move would be to shift midstream employees downstream. But that is much easier said than done, of course. Going up to someone who has spent 25 years in finance and saying, "We'd like you to go into the field and do negotiations" would be quite a challenge. I think that, moving forward, personnel shifts are going to be the biggest hurdles for companies to clear. Firms that can make it over will be strong; those with bloated midstreams will struggle.

Shingu: Since 70–80% of our workforce at CTC are engineers, we are thinking hard right now about how AI will impact what they do.

Iriyama: CTC engineers probably do the kind of work that AI cannot replace—going on-site, gleaning issues, and proposing solutions. If we move into a private-AI era, my thinking tells me that working with customers to enhance value by structuring the non-digital data at their sites will also be something that only actual human beings can do. At the same time, coding work itself will be much more efficient with AI. Engineers are going to be shifting their center of gravity away from things that AI can do toward "human-only" tasks.

Shingu: I see things the same way. As more and more companies embrace AI adoption, I think we will start seeing projects get smaller in terms of workforce requirements: five people might be able to handle something that used to take ten. Our engineers at CTC are taking the initiative to leverage what generative AI can do. With teams eagerly incorporating a diverse mix of new technologies, efficiency levels are rising. The goal of all that is to help address personnel shortages and support more customers. When I look at our operations, I get the sense that AI adoption will accelerate as we find ways to use it as a tool for solving business issues.

Iriyama: Which is exactly what you want to see. There are many cases of that pattern having a positive impact; one high-profile example is a Japanese D2C brand venture that uses AI for beauty-oriented appliances. Sales at the company were 7 billion yen in fiscal 2023 and 14.2 billion in fiscal 2024—and the forecast for fiscal 2025 is at 28 billion. The size of the workforce? Still under 30 employees. In the "after-AI" era, a context where AI is so tightly woven into everyday life, these types of companies are going to be everywhere. AI-native organizations will look nothing like "before-AI" companies in terms of organizational structure and per-employee value creation. Businesses lingering in the "before-AI" age will be facing the need to undergo major transformations.

Shingu: We are right in the midst of extraordinary change. We need to see the conditions around us right now as an opportunity, engage with AI on a more proactive level, and grow into a company that customers depend on more than ever.

Generative AI as Part of the Infrastructure of the Future

——As we bring the dialogue today to a close, let me thank you both for all your insights. Could you share your outlook on the generative-AI era and any final messages for our readers?

Shingu: Our conversation today has provided so many perspectives on AI's present and future, the challenges facing Japan, and the path ahead. Let me just add one more thing. At CTC, we have been updating our internal rules for using generative AI and our ethics policy. The rules we drafted about two years ago—when we knew much less about generative AI—were a bit tight and restrictive, prompting teams in the field to ask for more practical flexibility in using generative AI. This year, we revised the rules to better align with the current reality. The new rules are more balanced and differentiated: strict when it comes to handling highly confidential information but more open with most other kinds of data. Talking with you, Professor Iriyama, made it clear that we have to constantly re-examine how we engage with AI and stay at the forefront. We at CTC are going to keep working to help Japanese companies hone their capabilities to use AI in a free, flexible way and thrive in the generative-AI era.

Iriyama: I recently had the chance to talk with Jay B. Barney, a leading management scholar who co-authored a paper arguing that generative AI will not provide a sustainable competitive advantage. It was a wave-making statement, to be sure. The reasoning behind that argument is that, like the internet, generative AI is bound to become a form of social infrastructure—a tool everyone uses—someday. As a result of that evolution, society twenty years from now will be something we can hardly imagine today. At this point, whether or not to use generative AI is essentially a moot point.
Japan's on-site capabilities are strong. As long as firms can make effective use of generative AI, the possibilities will be enormous. Talking with you, President Shingu, has made me feel even more hopeful that Japanese companies will keep shifting their perceptions to see generative AI as a tool to take full advantage of. For organizations hesitant to take the first step, it would be a good idea to partner with CTC—if I may say so—and leverage CTC's capabilities to get the ball rolling toward meaningful transformation. As those kinds of efforts spread, they can contribute to change across Japan as a whole. I hope we see that happen. And thanks again for having me here today.

Shingu: It was a really engaging, encouraging conversation. Thank you.

“Making the World GOOD” through AI

Executive Officer
CTO & Deputy COO, Technology X Group
ITOCHU Techno-Solutions Corporation
Shun Ando

Co-CEO, XinobiAI Inc.
Representative Director, Metaverse Japan
Director, Generative AI Japan
Kuniyoshi Mabuchi

While Japan continues to hear about how it lags behind other countries in AI adoption, many of its peers on the global stage are seeing a steady rise in new, AI-powered businesses. Kuniyoshi Mabuchi, Co-CEO of XinobiAI and long an active player in the digital-marketing industries in both the United States and Japan, believes that the key to leveraging AI into new businesses is “vertical knowledge.” Shun Ando, CTC’s CTO, is leading a wide range of the company’s initiatives to help drive the wider use of AI across Japan. How can Japan ride the wave of transformation that generative AI is propelling and open up new horizons? What kind of future will AI create? We sat down with these two leaders, both of whom have watched the digital world evolve, to hear about their perspectives.

Coverage and text by Yuki Kondo

Shun Ando
Executive Officer
CTO & Deputy COO, Technology X Group
ITOCHU Techno-Solutions Corporation
Joined CTC in 1987. After working in general-purpose computer maintenance and launching network businesses, he handled projects involving Internet infrastructure for telecommunications carriers, mobile network systems, and more. Following a time as a fellow and serving in other roles, he assumed his current position in 2025.

Kuniyoshi Mabuchi
Co-CEO, XinobiAI Inc.
Representative Director, Metaverse Japan
Director, Generative AI Japan
After doing agency work in the United States, Kuniyoshi Mabuchi founded his own digital agency, expanded business, and then sold it. He later went on to serve as CEO of Ogilvy One Japan, a member of the WPP Group, and held CEO positions at four companies in the digital-marketing industry. In 2018, he became a director at Facebook Japan (now Meta) before serving as a partner at PwC Consulting and Deloitte Tohmatsu Consulting. He then made his way into his current role. Mabuchi’ s latest book is *AI-Powered Marketing: Beyond Efficiency - Practical Techniques for Generative AI Efficiency* (Impress Corporation).

The Internet, Smartphones, and Now, the Next Revolution

——To begin, could you each tell us a little about yourselves, your past experiences with AI, and what you are engaged in now?

Mabuchi: I currently serve as Co-CEO of XinobiAI, an AI start-up I founded last year together with entrepreneur Taizo Son. Our main focus is on developing "personal AI agents"—AI for individual users that can autonomously perform a wide range of tasks without human instructions. Before that, I held director positions at Meta (formerly Facebook Japan) and PwC Consulting. For years, then, my career has had two core dimensions: managing operations as an executive and digging deep into digital marketing and emerging technologies, or innovations with the potential to transform society. Generative AI is now beginning to surge as a massive technological shift, following the sweeping changes that the internet and smartphones brought on. For me, the transformation going on right now is the perfect chance to pursue a big endeavor from right here in Japan.

Ando: Since I joined CTC in 1987, my work has dealt with network-related technologies and other innovations that have defined the times.

In the 1990s, when commercial internet services were just getting started in Japan, I led efforts to figure out how we could leverage those new arrivals in business. As smartphones made their way onto the scene in the late 2000s, I helped build mobile-internet systems for a major carrier. In those early days of mobile internet, for example, I worked on developing "seamless roaming" mechanisms to prevent data-connection drops while users were on the move. Now, with generative AI driving massive changes, my work focuses on finding ways to apply AI technologies in making a positive impact on our customers' businesses and society as a whole.

Mabuchi: OpenAI made ChatGPT (GPT-3.5) available to the public in November 2022, but AI had already been a focus for me before that, as early as my time at PwC. I helped launch the AI Management Endowed Course at the University of Tokyo together with Professor Yutaka Matsuo. We were talking then, right around the GPT-3 stage, about how we might be in store for something big soon. About six months later, GPT-3.5 arrived and started making headlines. Now, not even three years later, GPT-5 is here. We have reasoning models—AI that can "think." That leads us to the cusp of the AI-agent era. The way I see it, we are living through an extraordinary transformation right now.

Ando: It's just astonishing how fast generative AI is evolving. But for a company, applying the technology to their businesses right away is much easier said than done. There are lots of constraints on AI adoption, including legal and regulatory compliance. The biggest thing affecting the adoption picture, though, is the need for systems that deliver tangible benefits to customers and society. Our aim at CTC is to deliver innovation across the industrial landscape, with the safety and security of our user companies, end customers, and society as a whole at the root of everything we do. From that foundation, we have also begun collaborating with U.S. start-up Liquid AI. Leveraging the company's technology for reducing the power consumption of AI processing, the joint initiative seeks to propel innovation and solve social issues in parallel.

What Japanese Companies "Hesitating" over AI Adoption Need

——People often say that Japan is lagging behind other countries in incorporating AI. What are your thoughts on the current situation?

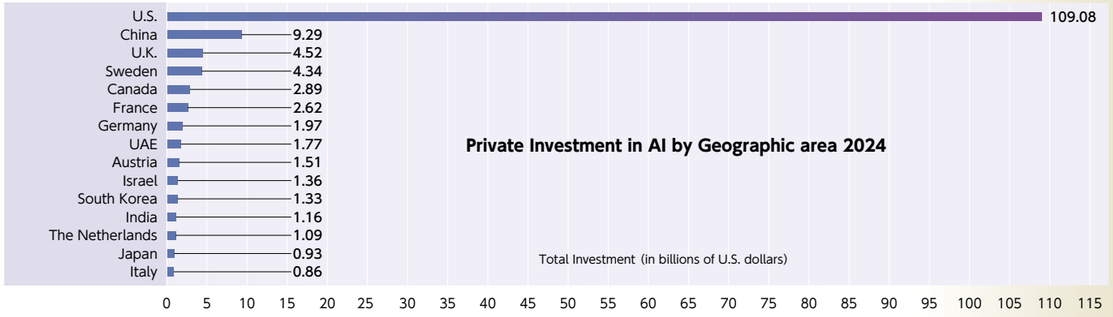
Mabuchi: To me, the fact that AI utilization has yet to make much progress in Japan seems like a wasted opportunity. Given the country's declining population and growing labor shortages, using AI to streamline operations would figure to be a big plus for Japan. I want to see more active discussion about putting AI technology into more use.
With the global competition over large language models (LLMs) and GPUs getting more and more intense, I think the area where Japan can still take a leading role on the global stage is AI applications. That potential is behind the big, ambitious challenge we are taking on right now: developing a made-in-Japan personal AI agent and taking the results worldwide.

Ando: We hear a lot about Japan being "behind" when it comes to AI adoption, but I would not necessarily say what companies here are doing is being "unwilling"—to me, it seems more like "hesitating." The risk of leaks of confidential internal data, uncertainty about the return on investment, and questions about how to address ethical issues all make it hard for companies to make a move.
In all the Asian countries that are actively investing in AI, the government is taking the lead with strong support measures. In Singapore, for example, the government provides technical and financial backing to state-affiliated organizations to encourage proactive AI adoption and accelerate implementation. The knowledge and experience that come out of those efforts form a foundation that helps foster AI adoption on a broader scope in the private sector, which I think has given corporate investment in AI a huge boost. In Japan, meanwhile, the public and private sectors approach AI in a complementary arrangement under the shared goal ensuring public safety and trust. The government works to promote AI use and establish related rules, while companies focus on AI development and implementation. I recently heard about a case in Singapore where a company gave its CDO, CAO, and CTO full authority to lead an AI project that went on to succeed. That kind of top-down initiative—where leaders take the decisive first step and then let the results spread bottom-up through the organization—is something I think needs to happen in Japan, as well. (Figure 1)

Figure 1 Private-Sector Investment in AI by Country

[Source] AI Index Report

Private-sector AI investment in the U.S. stands at roughly USD 109 billion, higher than the other countries by a wide margin, while Japan' s investment totals USD 930 million.



Mabuchi: I totally agree. Environments that make it easier to invest in AI, along with strong leadership within companies, are both vital. But I do think Japanese companies are doing a great job with AI education compared to their peers overseas. I think that element could be one of Japan's strengths moving forward. Education brings employees' literacy up, and the amount of in-house expertise rises with it. Japan may be a little behind the curve at the moment, but I'm sure that the consistent focus on education will bring opportunities its way.

Ando: We know how important education is, too, and we are putting a lot of effort into developing human resources with a strong command of AI. To start, we have introduced Microsoft Copilot and set up an environment that gives employees throughout the company the freedom to use it however they want. For software development with generative AI, meanwhile, we have also written up a set of guidelines that any engineer with programming skills can follow. Eventually, we want to create a setup where AI updates those guidelines automatically as generative AI continues to evolve. Right now, though, our employees basically fall into two groups: those who dive deep into AI and master it and those who use it pretty infrequently. As a company, our hope is for everyone to develop a solid AI skillset and be able to propose the use of AI to customers. Closing the AI-proficiency gap is one of the things we need to tackle.

Vertical Knowledge: The Key to Creating New Businesses

——How do you see the creation of new businesses that take advantage of what AI offers? What are the key factors going to be, and what kinds of fields have significant promise?

Mabuchi: In Silicon Valley, new ventures in AI are emerging virtually every day. You see a lot of activity with a focus on a single, specialized area, feeding AI with data and vertical knowledge—deep expertise in that field—to build entirely new business models. Transformations are already under way in fields like marketing, sales, human resources, healthcare, and finance. These are areas where vertical knowledge and data are readily available but industry-wide implementation of AI has yet to gain full traction. I think the key to creating new businesses, then, will be how effectively a company can combine different forms of vertical knowledge.

Ando: Same here. There are plenty of industries that have amassed so much specialized knowledge but lack the expertise they need to apply that data through AI. From communications to manufacturing, a variety of sectors in the industrial community are going to be seeing all kinds of new AI-driven businesses emerging. Personally, I think research in science and technology is ripe for AI utilization, too. If researchers can share data in areas like new material development, drug discovery, and environmental technology, it could shorten R&D timelines dramatically and lead to other benefits. That would accelerate the process of finding solutions to the social and environmental problems we face today.

Mabuchi: I think channeling new technologies toward solving social issues is crucial—especially in Japan, a country that ranks among the top developed nations in many ways, including social problems like population decline. The way I see it, Japan could be a pioneer in showing the world how to apply AI to all the issues we continue to grapple with. And as you mentioned earlier, there are people at CTC who are taking full advantage of AI. That is such a great situation to be in. When you have those kinds of people who love to learn AI and then translate that energy into taking on new challenges, you put yourself on the path to growth—for both your company and for society as a whole.

Ando: Exactly.

Mabuchi: At XinobiAI, our development process is all about setting a vision, building a prototype, testing it, scrapping it, and then building the next one. One of our engineers from Silicon Valley develops MVPs, or "minimum viable prototypes," at the pace of one per day. It makes it clear that we now live in an era where people who know AI inside and going to be working at that kind of incredible speed.

From Generative AI to AI Agents and Beyond

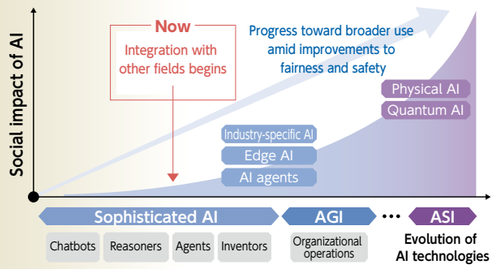
——You mentioned that generative AI will eventually give way to AI agents. What kind of evolution do you think AI will embark on beyond that?

Mabuchi: Entering the AI-agent era, a time when AI can do human work autonomously in the truest sense of the word, will be a revolution. And progress will not stop there, either. The next phase will be the integration of AI with the physical world: humanoids. Imagine a world where practical, capable humanoids are in everyday use—that is definitely something I can't wait to see.

Ando: I think AI is going to extend beyond the digital realm into the physical space, too. For that evolution to become reality, though, the foundational technologies supporting AI will need to take even more steps forward. One technological issue that I see looming on the horizon is the challenge of figuring out how to secure new training data. The large language models (LLMs) we have today have already learned most of the public information available on the internet—but there are no guarantees of how good that data is in terms of quality. From here on out, it will be so important to utilize the enormous volumes of data that companies have in their possession. Training AI on authentic, reliable data will improve output quality, and the technology will be able to tap into new data that was previously in-house at companies and out of public reach—post-launch information on products and services, for example. As the quality and quantity of circulating data go up, we will need solid, robust digital platforms to handle it all. In other words, AI, data, and digital platforms will need to evolve together in a globally coordinated way. If we can ensure that those resources are widely and appropriately accessible—democratized, you could say—I believe we will see the evolution of AI become reality itself. (Figure 2) With all of the pieces in place, I think the doors to a brand-new era will open up.

Figure 2 **The Technological Evolution of AI and the Resulting Impact**

To fully benefit from the evolution of AI and the impact it delivers to society, advances in the underlying technologies, along with safeguards for fairness and safety in decision-making processes, will be vital.



[Source] CTC Group Technology Vision

Learn more about the CTC Group Technology Vision here ▶
https://www.ctc-g.co.jp/bestengine/article/2025/doc/ctc-group-technology-vision.pdf?utm_source=magazine&utm_medium=qr&utm_campaign=2510_be17

Mabuchi: I am completely with you there. Going back to corporate data utilization, I think one possible approach would be to aggregate data within a given industry and create industry-specific training datasets with privacy safeguards and systems in place to keep trade secrets secure. Doing an effective job of leveraging that data would make the industry more competitive overall, a process that I think we will be seeing more of in the future.

Ando: And as data volumes increase, we will need enormous computing and network resources—which some predict we could run out of by 2050. Quantum technology will be key to addressing that challenge, I would expect. It may still in the research and development stage, but I think we will eventually see quantum technology advance in connection with AI and data and establish itself on a broad scope.

——How do you think evolution in AI will change the way people work?

Mabuchi: I think the changes in work styles will vary from person to person. The important thing will be how quickly people can establish a work style where AI is a given, a part of the picture from the beginning. How can we boost productivity in specific tasks using AI? How can we multitask more efficiently? The sooner we find answers to those questions and establish effective methods, the more time people will have to expand themselves—thinking, learning, and enjoying their hobbies. What I think that gives people is a richer overall vision and more opportunities to spark innovation.

Ando: I think one defining feature of future work styles will be a sense of liberation from the limitations of place and time. Work processes across the spectrum will be able to make progress without human involvement whatsoever, leaving people to simply oversee the results. That will make work styles more and more flexible. When I imagine the future, that's what I see—but, realistically, I think people of our generation might struggle to adapt to those changes and just keep heading into the office.

Mabuchi: That is certainly a possibility, yes. On the other hand, though, AI is going to make its way into medicine and caregiving, too. We might well be the first generation to use AI for every stage of life—from our working years on to the end.

Using AI to Build a Better Society

——Thank you both for sharing your insights today, from Japan's current situation and challenges to your outlooks for the future of AI. To close, could you each share your vision for the years ahead and any final message for our readers?

Ando: In February this year, CTC introduced new brand copy: "Making the World GOOD." At times, today's world can seem full of things that make the goal of a "good" world seem difficult to reach. But as we move into this new AI age, we might begin to see paths toward solving many of the challenges we currently face as a society. As a CTC engineer, my dream is to help create a world where everyone can live comfortably, in the truest sense, through new technology. With our corporate responsibilities always in mind, I want each and every one of our employees to aspire to making the world good in their own individual way.

Mabuchi: Of the three major technological waves that have come in recent years—the internet, smartphones, and now generative AI—I think this generative AI is the biggest. And as this enormous wave continues to bring all kinds of changes now and into the future, your point about having a vision for creating a better world and tackling social issues is so true; that approach will be extremely important. I hope CTC will continue to cherish that vision and lead the way forward for Japanese technology. For Japanese companies, just doing proof-of-concept work will never be enough to really accelerate AI utilization. The key is how to follow through to full-scale social implementation. If CTC can drive things forward in that respect—and if we can all push ourselves together—I believe Japan, and eventually the world, will keep getting closer and closer to being truly good.

Ando: Thank you for those inspiring words and such a thought-provoking conversation.

AIKEY WORD GUIDE

Fundamental AI Keywords
Learn These First Before Mastering AI

To what extent are you able to comprehend AI and utilize its strengths? AI literacy is now considered an essential element in the education of a businessperson. Here we will explain keywords that are fundamental to enhancing AI literacy and interpreting the latest information. Including unique perspectives from CTC, we illustrate the background behind its rising presence in the market along with some usage cases, plus the latest initiatives at CTC.

Yutaka Terasawa
Associate Principal
Digital Service Development Division
Digital Services Group
ITOCHU Techno-Solutions Corporation

Supports client companies' operational reforms and new business creation as an expert in data warehousing, business intelligence, statistics, AI, and optimization. Since around 2021, he has led his organization in business planning utilizing generative AI and has been advising client companies on technology. Since 2025, he has been aiming to bring about a new industrial revolution through his efforts in technologies and business development for physical AI synthesizing AI with robotics.

Shunta Kimura
AI and Advanced Technology Department
Digital Service Development Division
Digital Services Group
ITOCHU Techno-Solutions Corporation

As an AI engineer, he implements, uses, and handles technological support for generative AI both internally and externally. He builds AI agents in on-premises environments and conducts technology verifications of generative AI for on-site implementations, and also considers and creates advanced use cases through collaboration with Liquid AI.

[Multimodal AI] Comprehensively Grasping Multiple Modes of Information the Way a Human Does

This AI can comprehend text, images, sound, and various other types of information simultaneously, and produce responses accordingly in many different formats. The big difference is that existing LLMs*1 (text to text) and VLMs*2 (image to text) could only produce output in languages, but multimodal AI is compatible with multiple modalities*3 for both input and output.

We hardly ever rely on only one form of information for interactions in our work and our daily lives. For example, in meetings with a customer, we adjust more than just the content of the discussion as we talk. We also adjust our word choices, tone of voice, and gestures according to the other person's tone of voice, expressions, mannerisms, and other things that we notice. Similarly, multimodal AI can integrate multiple forms of data and process them to produce decisions and output. This enables its usage in settings that are more complex than previous technologies, with potential for application in a wide range of fields.

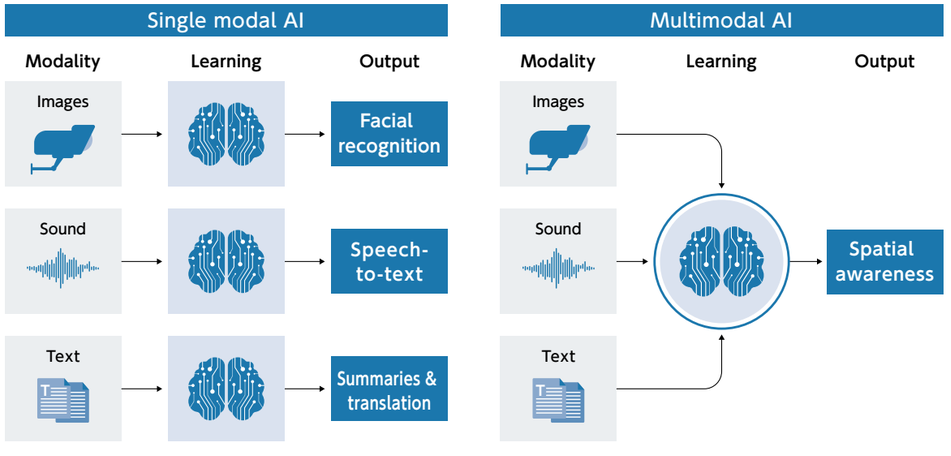
*1 **LLM (Large Language Model)**: An AI model that can generate natural sentences that fit the context by learning large volumes of text data and statistically ascertaining the relationships between words and phrases. It can be applied in a wide variety of language-related tasks such as translation, Q&A, and summaries.

*2 **VLM (Vision-Language Model)**: An AI model that can process visual information such as video or images and text (language) information simultaneously and ascertain the semantic relationships between the images and text. It can be applied for tasks such as writing to explain image content, answering questions about images, and entering text to search for related images.

*3 **Modality**: The type or format of data processed by AI, such as text, images, sound, video, and sensor data. AI often processed each modality separately in the past, but the arrival of multimodal AI has enabled even more sophisticated understanding and inferences.

CTC's Perspective! CTC considers multimodal AI to be a pivotal field, and is conducting relevant research and verifications.
We are working in collaboration with Kyoto-based pottery maker Asahiyaki on a new endeavor called the NeuCraft Project* utilizing generative AI technology. One initiative was to generate designs for new products by utilizing an AI model that can handle multiple forms of information such as images, text, and high-depth information.
Leveraging this knowledge, we are also accelerating efforts in multimodal, such as outputting suggestions for subsequent actions in the field of operations and maintenance based on information such as captured images and logs.
Since this is still a developing field, we will continue working on verifications while also actively exploring new use cases and application methods.

* NeuCraft Project:: https://neucraft.ai/



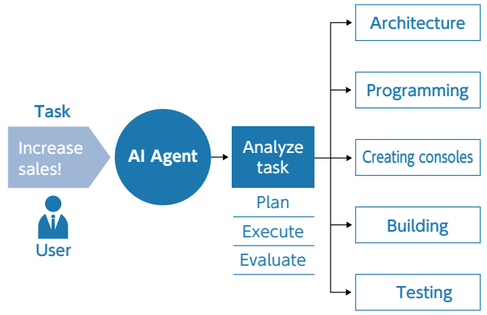
AI Agents

Autonomously Execute Tasks to Achieve Targets

AI agents literally play the role of agents who choose the optimal means for executing tasks assigned by humans and think about these tasks while carrying them out. Since they can act on their own decisions without detailed directions from humans, AI agents are also highly adept at working autonomously and suggesting things that humans fail to notice.

For example, if you just order it to "increase sales!" the agent will act just like a talented new employee who makes a plan and executes it their own way. On the other hand, they lack sufficient common sense and tacit knowledge, which means they could also make erroneous decisions in unfamiliar circumstances.

In Japan, labor shortages are increasingly severe as the population declines due to the aging society and falling birthrate. At the same time, workloads and customer needs continue to grow. As the market demands something that can make a certain level of decisions and execute them in place of humans rather than simply making work more efficient, AI agents are attracting attention as a technology capable of fulfilling those expectations.



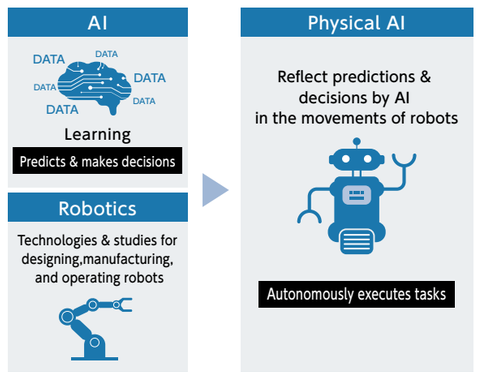
CTC's Perspective! At CTC, we design workflows tailored to customers' tasks after listening to them about the details of their operations. We can then incorporate AI agents into those operations to create AI on the level of a veteran employee rather than just an assistant, executing their operations effectively according to the actual workflows. This helps to standardize their operations and make them more efficient while also improving quality.

Physical AI

Installing AI Into Robots to Execute Tasks Autonomously

This technology combines robots with AI to make their own decisions according to the surrounding circumstances and move autonomously. Using sensors and cameras to recognize the surrounding environment, AI maps out the optimal movements of robots and mechanical devices. AI had conventionally been limited to decision making, but this enables it to take action in the real physical world. Due to labor shortages caused by the declining population and rising costs, demand for automation in Japan is skyrocketing in fields such as warehouses, factories, physical stores, and construction.

Initiatives that had stalled in the verification stages are now progressing toward commercializations thanks to lower prices for robot components in addition to rapid advancements in AI technology. With expectations for its usage in inventory inspections, automating preventive maintenance to avoid breakdowns and other problems, and monitoring danger zones, this technology offers companies the major advantages of saving labor and 24-hour operations. Going forward, physical AI has the potential to develop into a major industry as big as the automotive industry.



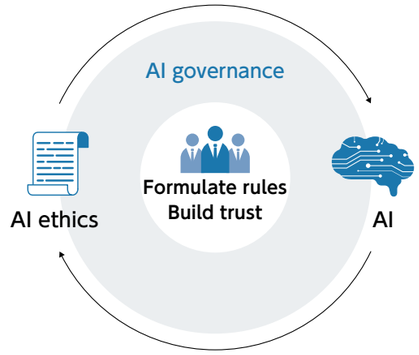
CTC's Perspective! In addition to experience implementing AI agents and multimodal AI technology, CTC also utilizes knowledge and expertise accumulated as a systems integrator to provide tailored services for customers in the field of physical AI.

AI Ethics & AI Governance

Managing & Overseeing AI by Setting Standards for Appropriate Use

AI ethics refers to the moral and social principles that should be observed when developing and using AI. Examples include the fairness of decisions, protection of privacy, and not causing harm to others. On the other hand, AI governance refers to frameworks and organizational structures for using AI safely and appropriately in accordance with these ethics. In other words, it could be called "internal rules for using AI properly and safely."

AI is already being utilized in many different fields. Although it generates new value and solutions, it could also bring about unforeseen problems and information leaks if there are no rules. That could run the risk of damaging a company's brand value and trust. AI ethics and AI governance are also important elements for increasing enterprise value.

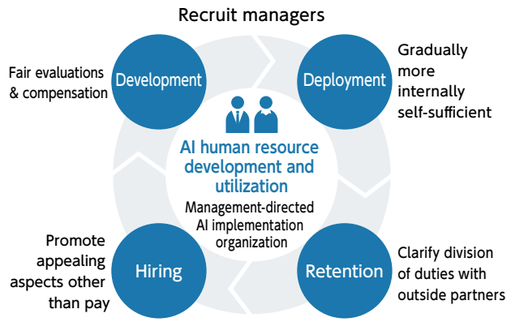


CTC's Perspective! We see many cases where guidelines for the correct use of AI were formulated but became obsolete because they could not keep up with the evolution of technology. At CTC, we have frameworks in place to flexibly revise internal guidelines according to the social landscape surrounding AI and swiftly communicate such changes.

AI Human Resources Strategy

Personnel Strategies for More Effective Use of AI

This refers to strategies to systematically consider systems for hiring, developing, and deploying the personnel that companies and organizations need to implement AI effectively. It is essential to strategically secure, develop, deploy, and retain the personnel who can ensure and bolster a company's ability to leverage AI. AI is already more than just a single technology. It forms the foundation of business innovation and new business creation. Without an appropriate human resources strategy, companies will not be able to successfully grow in the future.



CTC's Perspective! At CTC, we advocate the following solutions for issues that many companies face. These can be strategically implemented to ingrain the ability to leverage AI into your organization over the medium to long term.

(1) Cannot define career paths of personnel hired for AI
→Establish an AI organization directly under management, clarify the roles and career growth paths for specialists

(2) Existing personnel are demotivated by high salaries paid for targeted hiring
→Reconfigure fair evaluation criteria and compensation systems

(3) Hiring competition with IT companies arises, pay levels are disadvantageous
→Promote appealing aspects other than pay (discretion, social significance, growth opportunities)

(4) Do not have the AI expert managers to oversee specialist personnel
→Recruit managers from outside

(5) Reliance on outside consultants becomes normalized as organization-building efforts stall
→Formulate a roadmap, gradually reduce reliance on outside parties

(6) Not enough appropriate relationships are established with outside AI companies
→Clarify division of responsibilities in partnerships (eliminate the habit of outsourcing everything)

CTC Group Global Report

AI Implementations and Strategies from International Business Sites

CTC continues to grow as our network spreads.
The business sites in ours network are based in North America and in ASEAN countries and regions, including Malaysia, Singapore, Thailand, and Indonesia, as we gradually establish our footholds in these markets. In this issue, we share the latest reports about AI technology trends, use cases, and customer support initiatives in these countries from employees at active sites on the front lines.

America | ITOCHU Techno-Solutions America, Inc.

Exploring Preemptive Solutions for Trends on the Front Lines of AI in the US, Where Technological Innovation Moves Quickly

Kenta Watanabe
Business Development Manager
ITOCHU Techno-Solutions America, Inc.

Involved in various projects as a data science engineer. His duties are wide ranging, from requirements definition to data engineering, building AI models, and application development. Since August 2023 he has been working on product development in the US as an AI expert.

Activities at CTC America Focus on Three Functions

Generative AI and other AI technologies have evolved at a breakneck pace over the past few years and have quickly become part of the landscape at US business sites. ITOCHU Techno-Solutions America, Inc. (“CTC America”) based in Silicon Valley leverages its local network and extensive experience to discern the latest trends early on in the fields of AI, data, and infrastructure, and serves as an intermediary with Japanese companies. These activities are focused in the three fields of business development, systems integration, and trade geared toward Japan.

First off, in business development we leverage our network of venture capital (“VC”) in four main focus areas—AI and machine learning, modern data stack*1, cyber security, and AI infrastructure. We explore promising products by investigating and choosing startups. We also provide opportunities for customers in Japan to experience the latest IT trends directly and co-organize events that invite startups and VCs with cutting-edge AI, data, and infrastructure technologies to Japan. These activities find ways to acquire knowledge about advanced technologies and create opportunities for business collaborations with Japanese companies. They generate value that CTC America is uniquely able to create.

In the systems integration business, we support Japanese companies with US locations in building their infrastructure. In trade business for Japan, we export products from US IT vendors to the Japanese market.

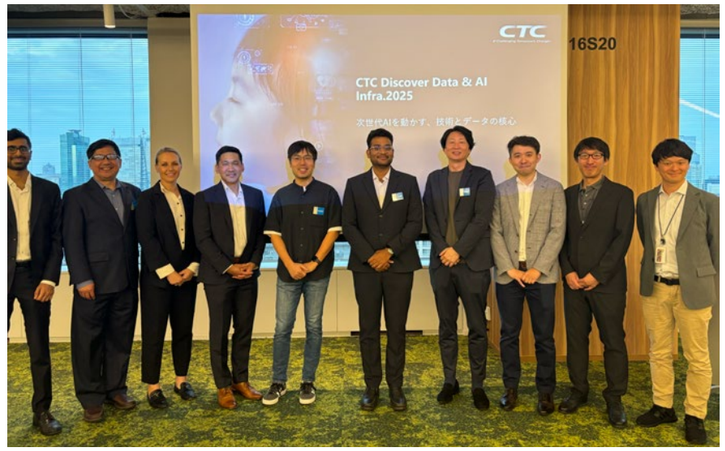
CTC America employees speaking at a partner company’s event. They explain recent collaborative projects with CTC.

The Nexus of Generative AI Use in the US

Use of generative AI is growing among US businesses. According to a recent survey, 78% of companies answered that they are “using AI (analytical AI + generative AI) in business operations,” while 71% of companies are “using generative AI on a daily basis.” On the other hand, AI’s contributions to companywide EBIT (earnings before interest and taxes) are still limited. The key to true value creation through AI is considered to lie in designing KPIs and redesigning operational workflows*2.

In Silicon Valley, return on investment money is clear, and total funds raised by US startups in the first half of 2025 grew by a whopping 75.6% year-on-year. AI-related companies are at the center of this rise, with funding concentrated on mega-rounds that raise US $100 million or more each time. These continue to be disproportionately concentrated in the main hubs (Silicon Valley and New York), and M&A is also happening at a brisk pace. The speed of progressions from PoC (field testing) to commercialization is also accelerating*3.

Large numbers of customers visit us at CTC America. This year we have had nearly 400 visitors. The feedback they provide serves as important guidelines for our trend analysis activities. Recently, interest in generative AI has been higher than ever, and the related needs for developing data usage platforms and strengthening security and governance are increasing in kind. These needs all correspond with the four main focus areas of CTC America, and customers have expressed high praise for our advance sharing of information at the forefront of trends and our startup introductions.



At CTC Discover Data & AI Infra. 2025, we invite startups and VCs to Japan where they provide the latest information to Japanese companies about matters such as developing AI infrastructure and data usage platforms.

Four Areas Capturing Attention in AI Technology

“AI” is actually a broad term that encompasses many different areas. The related trends are also changing on a daily basis. In this context, CTC America focuses on four areas of AI, looking for affinity with existing businesses and innovative forward-thinking initiatives.

(1) Agentic AI

The transition from AI being a passive co-pilot to being an agent that autonomously plans, executes, and verifies is accelerating. For AI to contribute to enterprise value, it is essential to redesign business operations and clarify operational KPIs.

(2) Edge/On-Device AI

The “on-device” premise of running AI directly on devices such as smartphones and computers rather than the cloud is becoming more prevalent. Reassessments from the standpoints of latency, cost, and privacy protection are advancing, and many think that the spread of AI computers could go into in full swing by the end of this year at the earliest.

(3) AI Security

LLMs have their own particular threats such as prompt injections, which maliciously utilize user inputs to manipulate systems into performing unintended operations, and data contamination in which incorrect information is mixed in with training data. To address these threats, governance, assessments, and monitoring structures must be established based on frameworks stipulated by the US National Institute of Standards and Technology (NIST) and best practices in each industry.

(4) Embodied AI & Physical AI

Progress is being made on uses of AI in physical space such as humanoid robots and mobile manipulation to handle physical objects while in motion. Development of AI models for robotics is advancing, as Embodied AI and world models of related technologies were identified as early noteworthy technologies by Gartner’s Top AI Innovation report published in August 2025*4.

In addition to core AI technologies, CTC America is also focusing attention on infrastructure to support AI development and operations.

Discovering & Working With Promising Startups

CTC America has been bolstering efforts to build relationships with local businesses in recent years and is currently working on collaborative efforts with companies involved in the four aforementioned fields.

(1) Agentic AI: Articul8

Provides generative AI platforms for large companies.

(2) Edge/On-Device AI: Liquid AI

Develops small AI models for use in local devices and edge computing.

(3) AI Security: Dynamo AI

Provides dedicated services for AI compliance.

Early-stage collaborative efforts focusing on essential technological elements for the AI era have been under way with these companies. Anticipating technological affinity with Liquid AI and potential for future business development, CTC America has also already begun researching and exploring partners in fields that seem at a glance to have little relation to CTC’s business, similarly to (4) Embodied AI & Physical AI above. AI infrastructure will also be an important focus. As reforms in data center design advance under the premise of high GPU density, we are continuously conducting comparative studies on the current state in which liquid cooling is becoming mainstream, while also staying up on cutting-edge trends.

With trends rapidly changing along with the dramatic evolution of AI, the difficulty of technological surveys and choosing startups for business development is increasing proportionately. At CTC America, we believe that AI can be used more effectively in business operations by adapting the operations and KPIs to AI while emphasizing the search for solutions that match customers’ needs as we always have. As we communicate these intuitive insights in the US to our customers, we will further accelerate our business development efforts to offer solutions capable of solving problems.

*1 Modern Data Stack: The concept of designing and building data usage platforms in combination with cloud services or SaaS. It combines specialized tools with each respective step in the series of processes from data collection to processing, analysis, and usage for more efficient and flexible usage of data.

[Reference]
*2: https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai
*3: https://news.crunchbase.com/venture/global-funding-climbs-q2-2025-ai-ma-data/
*4: https://www.gartner.com/en/newsroom/press-releases/2025-08-05-gartner-hype-cycle-identifies-top-ai-innovations-in-2025

Singapore

Singapore | CTC Global Pte. Ltd.

Leveraging Generative AI as a Global Partner to Help Transform Customers' Business Operations

Peh Swee Hong CTO, CTC Global Pte. Ltd.

Has over 20 years of experience in the IT industry and now leads the Technology & Innovations Department as CTO. Heading up CTC Global Singapore's technology roadmap, he supports customers' DX initiatives.

The Generative AI Wave Hitting Singapore

In Singapore, generative AI is rapidly becoming part of business and everyday life. This was achieved through the combined effects of having a citizenry with a high rate of digital literacy, aggressive government policies, and a labor force that is capable of flexibly adapting to change.

Particularly amongst the younger generation and professionals, generative AI usage rates are higher than average in the Asia Pacific region, yielding concrete results such as improved productivity, generating ideas, and better operational efficiency. These advancements are actively backed by the government's National AI Strategy 2.0 and large amounts of funding, particularly for the fields of finance, ICT, and healthcare. Singapore is also making future-oriented moves seeking to integrate AI usage with the national workforce, balancing innovation with ethical, safe implementations while recognizing the potential risks of generative AI. While many Singaporeans have a positive outlook on AI, some people are concerned about cyber security, invasions of privacy, and handling of information.

Initiatives at CTC Global Singapore

Aiming to recognize changes such as these early on, CTC Global Pte. Ltd. ("CTC Global Singapore") has been bolstering its use of generative AI. Starting with the emphasis that "we ourselves are the implementers," companywide AI use went into full swing starting a year and a half ago. One of the fruits of those efforts is the CTC AI Portal. We have consolidated the groups of tools that employees can use in their daily work and are implementing solutions such as the following.

CTC AI Portal

- **CTC GPT**: Chatbot that instantly responds to inquiries about HR, IT, and business management
- **AI Guardian**: Detects improper requests and personal information to ensure safe AI usage
- **Smart Recruitment**: Automatically analyzes application documents to improve the efficiency of candidate selection
- **Document Intelligence**: Extracts and analyzes necessary information from PDF and Word documents
- **Enterprise Translator**: Outputs high-accuracy translation, primarily between Japanese and English
- **Code Assistant**: Aids development by automatically checking code quality and security

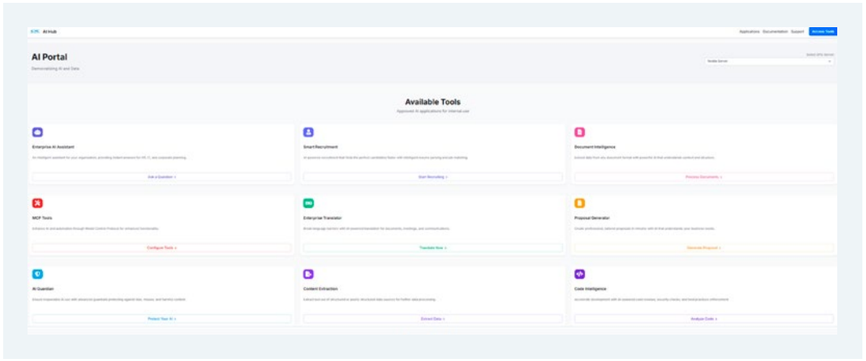
These initiatives are making internal work operations more efficient, and we are simultaneously using them to propose practice-based insights to customers.

CTC Global Singapore is also already supporting generative AI implementations in many different types of business.

Customer Implementation Support Examples

- **AI Chatbot for Major Insurance Companies**
  Automates insurance contracts, purchases, updates, and handling of insurance claims via WhatsApp. Multiple autonomous AI agents work together to provide swift, efficient client services.
- **Healthcare AI Avatar**
  Currently under development, AI Avatar assists with preoperative preparations and drug administration, and can facilitate lifestyle improvements. This solution provides streamlined support to patients while addressing the issue of labor shortages in healthcare.
- **Document Processing Solution (PoC for Companies)**
  This solution uses generative AI from AWS to automate summarization of PDF documents and masking of personal information. It reduces the cost of storing documents by digitalizing them, while making searches more efficient and enhancing compliance monitoring.

The generative AI market in Singapore has already moved from the testing stages to the full-swing phase. Leveraging the strengths of an extensive track record of in-house implementations and a diverse range of implementation cases, CTC Global Singapore will continue delivering high value as a global partner that helps customers transform their business operations.



Homepage of the CTC AI Portal. AI tools that employees can use for work operations are consolidated here.

Malaysia

Malaysia | CTC Global Sdn. Bhd.

Government AI Policy in Malaysia and Technological Innovation at CTC Global Malaysia

Peter Tan Chief Technology & AI Officer, CTC Global Sdn. Bhd.

Previously managed outsourcing operations to Malaysia's two main banks as delivery director. He now handles technology strategizing, end user computing, and workplace solutions as CTO and workplace business director. Currently, he handles formulation and implementation of AI and innovation strategies.

National Aim to Become a World Economic Power in AI

AI implementation in Malaysia is accelerating through collaborative efforts between the government and citizens. The National AI Office (NAIO) established in December 2024 is formulating an AI technology action plan that will control AI policy, ethics, and regulations. Having launched initiatives such as AI sandbox and AI at Work 2.0, NAIO is also looking to enact AI laws. This fiscal year they are investing a large amount of the national budget in areas such as AI R&D and education expenses at universities*1 with the aim of becoming one of the world top 20 AI economies.

With this backdrop, CTC Global Sdn. Bhd. ("CTC Global Malaysia") has implemented AI in phases. Starting with the use of machine learning to identify root causes through failure detection and predictive maintenance, we were able to optimize IT operations. Using LLMs, we then introduced document summarization, in-house chatbots, and AI assistants, while also supporting areas such as automation of business operations and knowledge utilization.

Currently we are focusing on agent-style AI using the latest frameworks such as LangChain*2 and AutoGen*3. Using AI to automatically execute complex tasks such as IT operations, security, and ERP/CRM operations and link these with APIs and databases, we will deliver a high degree of automation in overall business operations. CUVIC AI Technical Solutions Laboratory is also scheduled to open this October. This laboratory is for conducting joint verifications of AI technologies together with customers. In addition to collaborations with NVIDIA and Red Hat, we are working in strategic partnerships with AI vendors to support customers' growth, with sights set on the future.

*1 Invested approximately ¥21 billion of the national budget in AI R&D, ¥1.8 billion in AI education at universities, and ¥10.5 billion in support for startups in fiscal 2025.

*2 LangChain: A framework that links multiple AI models and tools to make complex processes possible. Ideal for building AI agents such as linking with memory and external data.

*3 AutoGen: A Microsoft-developed framework for building AI agents. It achieves a high degree of automation by having multiple AI agents cooperate to execute tasks.

It was recognized among AI initiatives with the AI Award presented by PIKOM, the National Tech Association of Malaysia comprising over 1,000 of Malaysia's ICT companies.

Indonesia

Indonesia | PT. Pro Sistimatika Automasi (Prosia)

Growth of Generative AI in Indonesia and Government Support Measures

Tommy Limardi Product & Technology Manager, PT. Pro Sistimatika Automasi (Prosia)

Involved in areas including software development, architecture design, and data management, with over 22 years of extensive experience. He has led numerous projects to success and is currently managing product development, data analysis, and AI teams.

In the National AI Roadmap, Human Resource Development Also Thrives

Following the worldwide trend, usage of generative AI is also advancing swiftly in Indonesia. Concurrently, user numbers for OpenAI's ChatGPT have skyrocketed from approximately 5.1 million at the end of 2024 to around 17.5 million as of July 2025. Students and young company employees between the ages of 18 and 34 comprise the bulk of those users, a phenomenon resulting from use cases that were broadly circulated via social media.

Government aid is also a significant contributing factor. Indonesia's Ministry of Communications and Digital Affairs formulated their National AI Roadmap, through which the country aims to produce 12 million digital-ready professionals by 2030 through their AI human resource development program called the AI Talent Factory. The country has also been capturing attention for its approach to attract a symbolic leader of the AI era by issuing a Golden Visa to OpenAI's Sam Altman.

Generative AI offers growing potential for operational efficiencies and improved services, but it also presents challenges in terms of data privacy, proliferation of misinformation, and risk management. While addressing issues such as these, Prosia is also working with Compnet to develop the Internal Compliance AI Assistant, which employees can use to consult with AI about internal rules and case examples. In internal surveys as well, roughly 80% of employees indicated that they expect "generative AI will have a positive impact on my job in the next few years." Going forward, Prosia will remain dedicated to the pursuit of AI use that helps to deliver solutions to customers' issues.

The AI Team that participated in the Dell AI Factory workshop held in Singapore in July 2025. The latest information is regularly updated.

José. Yoshiaki Kawashima's

"Coffee Hunting" Adventures

It's now been half a century since José. Yoshiaki Kawashima first set out at age 18 for Central and South America—lands he had long dreamed of since he was a boy.
Fueled by a relentless passion for great coffee, José. has weathered every obstacle that has come his way. This is his extraordinary story.

Coverage and text by Kayo Sakai

PROFILE

José. Yoshiaki Kawashima

President & CEO, Micafeto Co., Ltd.
Chair of the Board, Sustainable Coffee Association of Japan
Executive Committee Director, Challenge Coffee Barista

Born in Shizuoka in 1956, José. Yoshiaki Kawashima traveled to El Salvador in 1975 to study at a university. There, he joined the National Coffee Institute in El Salvador—then one of the world's three most prominent organizations dedicated to the study of coffee. Setting off on a career in coffee, Kawashima spent time developing farms for a major coffee company before founding Micafeto Co., Ltd. in 2008. He also oversees HINARI CAFE, operated by CTC HINARI Corporation, and supplies the coffee beans served there himself.

As a "coffee hunter," Kawashima travels the world in search of the unknown—discovering and preserving endangered coffee varieties and tracking down elusive cultivars with near-mythical status to bring them back to life. His major works include *Decided to Change the World Through Coffee, Understanding the SDGs Through Coffee* (both from Poplar Publishing), and *Coffee for a More Fulfilling Life* (Mynavi Publishing). "José." is the nickname he goes by overseas.

How Coffee Became My Life's Work: A Bittersweet, Formative Experience in El Salvador

I was born into a family that ran a coffee roasting and wholesale business. Our warehouse, packed with burlap sacks of coffee beans, was my playground. On the sacks were names of faraway countries, places I dreamed about visiting. From the time I was in elementary school, I declared that I'd go to Brazil someday—a habit that earned me scoldings from my father. But I never stopped saying it. By the time high school rolled around, my father finally gave in and decided to let me see the world. He told me to study abroad at a prestigious national university that he'd visited in Mexico on the way back from a tour of coffee farms. He had no connections, though—no information about how to make it happen. So he reached out to Salvadoran Ambassador Béneke, who'd organized the tour. It was that conversation that ended up punching my ticket to El Salvador. And it planted the seeds for my life in coffee.

The ambassador arranged everything to get me settled. I stayed with his sister's family, and I enrolled in the economics department at a mission-run private university. After a few months, I'd earned a nickname from my friends—"José"—and started to pick up a little Spanish. Feeling more and more comfortable in my new home, I got to looking for a place to study coffee. That search led me to the National Coffee Institute. Without making an appointment, I walked in and asked to see the director. They turned me away, naturally. But I kept showing up, every single day, until I finally secured a meeting with him. I told him I'd come all the way from Japan just to study coffee, and my persistence apparently convinced him enough to let me study at the Institute under a young doctor in agriculture for two years.

When I first arrived in 1975, El Salvador ranked third in global coffee production and first in yield per unit of area. I didn't know at that point that the director—who would later become the Minister of Agriculture and Livestock—was leading one of the world's top research institutions, on par with those in Brazil and Colombia. So, in the end, I'd landed the opportunity to learn with one of El Salvador's brightest young minds in agriculture.

I took a leave from my university and started going to the Institute, where I rotated through departments full of research specialists—pathology, economic entomology, genetics, breeding, agriculture, soil science, and more—spending several months at a time in each. I also traveled to experimental farms across the country. And the more I learned about coffee trees, the deeper I went, the more fascinated I became. What really struck me at a visceral level, though, was seeing the people working at the experimental farms: their strength, their warmth, and their techniques were incredible. When they were thirsty, for example, they'd shimmy up palm trees to drink from coconuts. I couldn't believe what I was seeing. At the ambassador's suggestion, I joined the workers for the harvest, living and working on the farm. They picked the red cherries ten times faster than I could. And they were so nice to me, too. Maybe because they'd never had a researcher working alongside them before—or maybe because El Salvador has always seemed to have a soft spot for Japan—they welcomed me with open arms. People in El Salvador, diligent and dedicated through and through, often call themselves "the Japanese of Central America." What they taught me was that coffee trees and cherries are living things—sensitive to the farm's soil, climate, and, on top of those environmental conditions, the hands of the people who plant, graft, and take in the harvests. I realized that coffee was my calling. I told my father I wouldn't be taking over the family business, and he disowned me.

Ambassador Béneke would often come back and visit me. Every time I saw him, he reminded me of just how important street smarts are. In places that lack the resources of developed countries and have sizable gaps between the rich and the poor, he said, book smarts alone aren't enough. You need knowledge that you can't learn on academic tracks. He told me to be ready and determined to adapt flexibly no matter what happens instead of depending on what I'd learned in the abstract. It was a positive approach to things, one that focused on getting through whatever situation came along. "Don't live just for yourself," he said. "Put everything you've got into serving everyone who needs you." Through the way he lived his life, Ambassador Béneke also showed me that using your connections for the good of others—not for your own gain—makes your circle of trust stretch even wider. That wisdom is something I'll always treasure.

But then, things took a tumultuous, tragic turn. In 1979, a coup shook El Salvador. The insurgency behind the coup, which had its roots in the mountains, found its way to the capital. Without any support coming in from Japan, I did part-time work alongside my research to survive. But through the windows of the buses I took to the Institute, I'd sometimes see lifeless bodies strewn on the roadside. Ambassador Béneke—who had returned home after completing his posting in Japan—was targeted by guerrillas and killed. I'd lost my mentor.

While other researchers were fleeing the country, I decided to stay. I was determined to push through. But it was a situation where foreigners like me ran the risk of being kidnapped. Eventually, I was barred from coming onto the premises of the experimental farms I'd worked at. I needed a place to evacuate to, and I chose Los Angeles—close enough to return quickly once I could resume my coffee research.

(To be continued)

Kawashima during his time in El Salvador, on a trip to Guatemala

Illustration: Takeshi Chiba

José.'s "Did You Know?": Coffee Trivia

#1 Coffee is a Fruit!

When people look at a cup of coffee, I doubt many imagine fruit. But for me, coffee being a fruit is something I've always made a point to mention. Why? Well, first of all, coffee comes from fruit. The beans are the seeds of the coffee tree's fruit, which ripens bright red like sweet cherries on a branch. Those coffee cherries are actually quite sweet, too—some even reach a sugar content of over 20 percent. Another reason is that, just as fruit tastes best when it's ripe, the best coffee comes from fully ripened cherries. If you pick them before they've reached optimal maturity, you'll get bitter, harsh-tasting results—just like unripe fruit. Coffee brewed from those types of cherries tend to have a flavor that seems off. Coffee cherries don't continue to ripen post-harvest, so the flavor you get in your cup hinges on how ripe they are at picking. And the third reason is that coffee, like fruit, is meant to be enjoyed for both its sweetness and its acidity. Coffee is a fruit. That's why making coffee with nothing but perfectly ripe beans creates results that are free of any bitterness or off-flavors, unlocking the coffee's true character.

* Coming up next time: "How to Spot Tasty (Ripe) Coffee Beans"

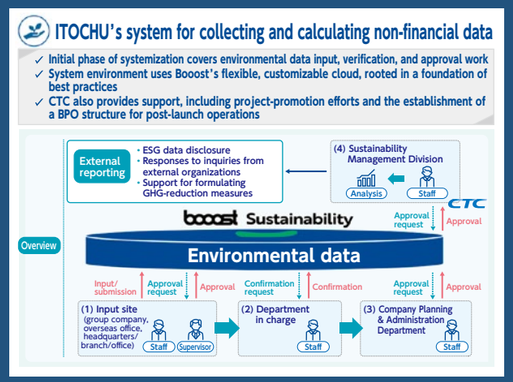
Ripe coffee cherries, deep red in color. A gentle squeeze will release a little juice—the sign they' re ripe for the picking.

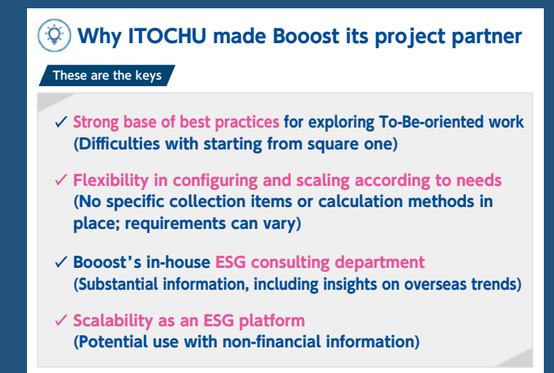
ITOCHU Digital Value Chain

With new sustainability disclosure standards set to come into effect in 2027, more and more companies are now developing and implementing concrete measures in preparation. ITOCHU Corporation (ITOCHU) is no exception. The company has invested in Booost, Inc. (Booost), which helps enhance enterprise value by collecting and disclosing non-financial information, as part of its effort to support its sustainability management across the board. ITOCHU continues to strengthen its collaborative ties the company. By combining the comprehensive strengths of the ITOCHU Group with the technology and expertise of Booost and other partners it has forged capital or business tie-ups with, ITOCHU provides end-to-end support—from consulting on information collection and disclosure to system implementation, data analysis, and GHG reduction.
Through its collaboration with CTC, ITOCHU has the ability to cover substantial ground: it can introduce sustainability ERP systems, coordinate with surrounding systems required for data collection, integrate data, establish operational processes, and more.

Information Technology Business Department, ICT Division
ICT & Financial Business Company, ITOCHU Corporation

Learn more about the digital business alliance with CTC here▶
https://www.itochu.co.jp/ja/ir/doc/annual_report/online2023/feature3.html





The Most Popular Sustainability ERP among Major Corporations: Driving Improvements in Enterprise Value Through Non-Financial Data Collection and Disclosure

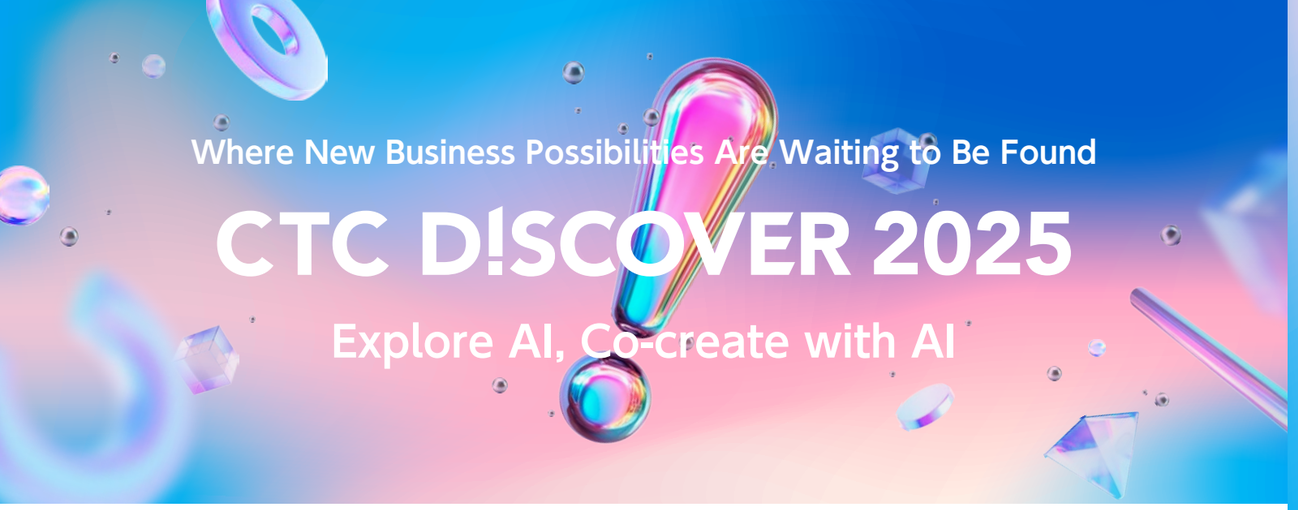
Hirokazu Aoi
CEO, Booost, Inc.

Corporate sustainability practice now goes beyond regulatory compliance. It involves integrating non-financial information into business strategy and linking it to growth and value creation. To do that, companies need the kind of transformation that does not simply lie on an extension of the current trajectory—an update to the "management operating system" itself.
At Booost, our mission is to turn sustainability into a true growth engine, elevating the value of every enterprise. We work to fulfill that aim by positioning sustainability management not as a compliance obligation but as an operational foundation that bolsters management execution. Our systems streamline on-site work and deliver real-time data to management personnel, supporting and enhancing the decision-making process. Built with scalability and adaptability to evolve with changes in the regulatory environment and shifts in market demands, the systems provide a long-term support infrastructure for sustainability management.
At the core of our solutions is "booost Sustainability," a sustainability ERP that complies with international disclosure standards and handles over 1,200 environmental, social, and governance-related data points. With the platform, companies can manage their non-financial information at the same level as their financial data. Built-in data governance functions with globe-spanning reach also enable multi-level approval flows across the user's corporate groups, supply chains, and organization as a whole. The booost Sustainability framework even accommodates third-party guarantees to optimize disclosure tasks on a phase-to-phase basis.
Since launching, the platform has made its way into far-reaching use: approximately 2,000 companies and over 192,000 sites in more than 92 countries (as of February 2025) have implemented booost Sustainability, giving it the top market share among major corporations.*
At Booost, we also offer sustainability consulting services. Helping clients do everything from integrating their regulatory compliance to creating strategic plans, we enhance enterprise value in multiple dimensions.

* [Source] ITR, "ITR Market View: Budget/Expense/Subscription Management Market 2025," Sustainability Information Management Tool Market (by Sales Level; 500 Billion Yen+ Yearly): Sales Value Share by Vendor (FY2024 Forecast)

CASE STUDY

At the ITOCHU Group, Booost was behind a sizeable project to overhaul the company's environmental-data collection and calculation processes across roughly 600 domestic and international sites. The project overhauled Excel-dependent operations and positioned booost Sustainability as the basis for building the new approach. Now, with the system fully live since March 2025, ITOCHU is achieving both regulatory compliance and better operational efficiency.
Overseeing the project is ITOCHU's IT & Digital Strategy Division, which serves as the overall project lead and collaborates with the Sustainability Management Division on requirements definition and operations design. Booost is responsible for providing both the solution and specialized consulting, while CTC delivers support across a broad scope—everything from solution implementation and solution rollout across the ITOCHU Group to establishing a BPO framework to handle inquiries from domestic and overseas subsidiaries.
The project has earned high marks for its business-process design grounded in best practices, flexibility to adapt to regulatory changes, expert consulting tailored to actual operations, and scalability for the future. These strengths have allowed ITOCHU to construct a foundation with a forward-looking perspective, capable of extending into areas such as calculating Scope 3 emissions and managing data on human capital.
In October 2024, ITOCHU and Booost entered into a capital and business alliance. Under this strategic partnership, the two companies are expanding their range across a diverse mix of business types through CTC and drawing on best practices cultivated through ITOCHU's own sustainability transformation to accelerate support.
Looking ahead, Booost will continue working with CTC to provide tailored consulting and implementation support for companies introducing booost Sustainability, applying the know-how that we gained on the ITOCHU project. We look forward to even more endeavors in our effort to advance beyond compliance, aspiring to sustainability management that creates value.



What is CTC DISCOVER?

The heat we experienced this summer was intense, which reminded me of the increasingly severe issues confronting our industry and daily lives such as climate change and labor shortages. Changes in global trade and regulations have also brought about increasing uncertainty in corporate management. Particularly in situations such as this, AI and other technologies aid decision making at worksites and fuel new value creation. As we advocate "your future vision, making it happen together," CTC will continue working earnestly to leverage our partnerships with tech companies from around the world along with our multi-vendor strengths to explore issues together with customers, map out future businesses, and co-create to turn these into results. Starting this year, the CTC Forum which we have organized for around a decade on an ongoing basis will now be CTC DISCOVER. The name and the content of event itself are both evolving, from a gathering place to a place for discovering value.

Takanori Minatohara
Director & Executive Vice President (EVP)

With the theme of "Explore AI, Co-create with AI," CTC DISCOVER 2025 will offer an extensive lineup of case examples from domestic companies and speeches about new technologies. Join us, where new business possibilities are waiting to be found. I'm looking forward to seeing you there. During the event, you can have one-on-one discussions with expert engineers and experience our latest demos. In these times of change, let's take the next step together.

Main Event Program

October 17, 2025 (Friday)

Grand Prince Hotel Shin Takanawa
International Convention Center Pamir,
Hiten Banquet Hall

Keynote speech	Three parts : 10:00-11:50
Breakout meeting speeches	63 speeches : 12:00-17:40
Exhibition	127 booths : 11:30-18:00
URL	https://discover.ctcevent.jp/sess/

Check here for timetables and details of all 63 speeches.

Keynote Speech

Molding the Future with AI Co-Creation to Pioneer New Business Frontiers

Speaker

Tatsushi Shingu
President & CEO
ITOCHU Techno-Solutions Corporation

Motoaki Terai
Senior Corporate Executive Officer
Central Japan Railway Company

Ramin Hasani
Co-founder & CEO
Liquid AI, Inc.

Takeshi Okada
CEO of Imabari Yume.Sports Inc.
Former Head Coach of the Japan National Football Team

Highlight #1

Pick up Customer

Initiatives for the future of Central Japan Railway

We shine the spotlight on Central Japan Railway Company which is working toward establishing data-driven railway operations leading up to the opening of the Maglev Chuo Shinkansen. After a discussion with CTC's CEO Tatsushi Shingu in the keynote speech, two breakout meeting speeches will be presented. One will be about maintenance-related DX for achieving data-driven operations, and the other about switching to in-house production of operation systems. These initiatives can be observed close-up at special booths in the exhibition space. You might even be able to hear explanations directly from Central Japan Railway. Experience the future of maglev operation for yourself.

*Image is for illustrative purposes.

Highlight #2

Ask the Expert

One-on-one Space with Engineers in Various Specialized Fields

At CTC, we have large numbers of engineers with extensive knowledge who are active in various fields from AI and quantum computing to agritech. The flow of information in speeches and exhibition booths at the event tends to be one-directional. Time for question and answer sessions is also limited. In "Ask the Expert," you can engage in discussions and gather information in one-on-one sessions with engineers who have extensive knowledge and experience in specific specialized topics. Before the event begins, specialized topics can be seen and one-on-one time can be booked. Find your next path forward in these 30 minutes dedicated to you.

Highlight #3

Tech Experience

TownCraft: Create Towns of the Future with Other Participants

In TownCraft, you can create cities and towns of the future in virtual space, together with other event participants, employees of CTC group companies, and people from sponsor companies. Participants use their own smartphones to select the buildings and transport vehicles that will comprise the town and choose the path of their future development.
AI derives the path of the town's future development according to the development paths chosen for these pieces entered into the virtual space, creating future cities and towns that reflect the ideas of the participants. Enjoy watching these cities and towns grow on the screen of your own smartphone and on the big screens inside the venue.

Visit the CTC DISCOVER website here ▶
https://discover.ctcevent.jp

CTC UPDATE

More convenient, more user-friendly, and more exciting than the status quo. We freely combine the power of IT while delivering solutions to the challenges facing society. In the CTC Group, we always continue to challenge ourselves at new endeavors as an IT partner that makes the world good. Here, we share some announced news as the latest from the CTC Group about what we are doing among the unlimited possibilities around us.

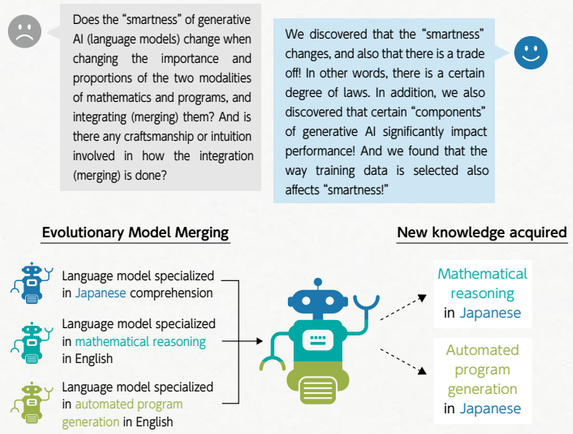
The CTC Group' s webpage for press releases is here ▲
https://ctc-g.co.jp/en/company/releas/

01

Gave a Presentation at an Academic Conference on Verification Findings for *Evolutionary Model Merging* Technology that Integrates Multiple Specialized AIs

At a meeting of the Information Processing Society of Japan's Special Interest Group on Natural Language Processing*, we presented the verification findings for Evolutionary Model Merging technology that integrates domain-specific AI models (DSM) optimized for specific tasks and specialized fields.
This research will serve as guidelines for systematizing AI model integration processes that had previously been reliant on personal expertise. Three DSMs—Japanese language comprehension, mathematical reasoning in English, and automated program generation in English—were integrated through Evolutionary Model Merging, and the improved accuracy of mathematical reasoning and automated program generation models in Japanese was subsequently verified. We derived effective design guidelines for AI models from the performance assessment after the integration.
These findings will likely pave the way to building a framework for flexibly combining and using various AIs.

*The Special Interest Group on Computational Language was launched in 1975, and its name was changed to the Special Interest Group on Natural Language Processing in 1981. It serves the important role of researcher interchange between academia and companies in the field of natural language processing in Japan.

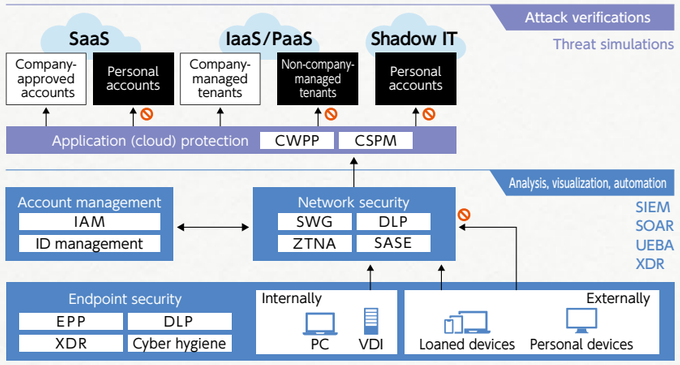


02

Launched Security Measures Assistance Service Utilizing Multi-vendor Verification Environments

We launched a security measures assistance service that utilizes the Cyber Security Lab (CSL) multi-vendor verification environment to verify and compare security services.
CSL is an original verification environment built by CTC for security products, capable of observing linkages with the functions of multiple security products and existing systems in a short period of time. Since it can artificially recreate and verify system environments according to customers' requests, it can select the optimal solutions combining multiple products while simultaneously considering multiple factors such as performance, operations, and costs.
We will further expand the lineup of products for CSL going forward, verifying a variety of security products while bolstering our security-related proposal capabilities and the technological skills of our engineers in the process, as we continue to support stable system operations.

Domain mapping of products compatible with Cyber Security Lab (CSL) multi-vendor verification environment



03

All Mechanical Equipment Maintenance for Maglev Chuo Shinkansen Jointly Developed an App That Raises Efficiency and Quality

Together with Central Japan Railway Company (JR Central), CTC developed an app that links the data for all maintenance operations on the Maglev Chuo Shinkansen.
It links the management of inspection equipment with an entry form solution for regular inspection results in the Machinery Operation System (MOS), boosting the efficiency and quality of all maintenance operations. This development was performed using the OutSystems low-code development platform which can swiftly build applications with minimal coding and employs agile development methodology. Going forward, our operational trials will continue on the Yamanashi Maglev Test Line as we continue refining the application to facilitate safe, stable operations of the Maglev Chuo Shinkansen.

*Agile is a development methodology that repeatedly performs the sequence of processes from planning to design, development, testing, and release in short phases.
It offers the ability to swiftly adapt to specifications changes and customer needs, among other advantages.

04

Centralized Maintenance of Multi-Vendor Environments Maintenance Transfer Services via CTC Technology

CTC Technology (CTCT) has been providing maintenance services that exceed the levels of manufacturers for many years, offering high quality services backed by advanced technological capabilities at affordable prices. Many customers have expressed high praise for the reliable technologies and responsiveness that support the stable operations of their systems. CTCT visualizes the current costs by performing maintenance cost diagnostics and analyses, enabling cost mitigation and optimization. Those savings can then be diverted to investments in growth strategies such as implementing DX, bolstering security, or human resource development. Centralizing maintenance of multi-vendor environments at CTCT also makes operations simpler, significantly reduces workload for management tasks such as contracts, payments, and approval requests, and raises operational efficiency. CTCT's maintenance transfer services reduce costs while also improving quality, delivering robust support for customers to boost their competitive edge.

Details about CTCT's product maintenance services are here. ▶
https://www.ctct.co.jp/service/maintenance/

05

Achieving Delivery Route Optimization at Blinding Speed

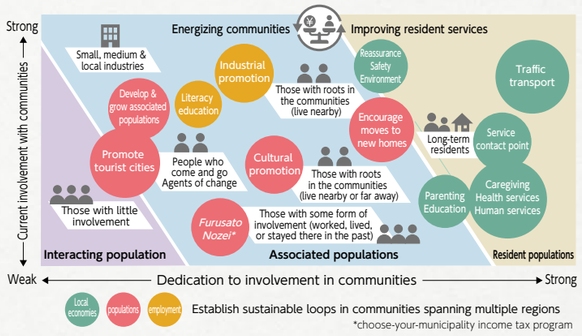
CTC and TriValue Co., Ltd. collaborated with A Star Quantum Inc. in a three-company joint effort to develop OptyLiner, a solution that creates delivery routes using quantum computing and mathematical optimization technologies. OptyLiner is a service that calculates optimal delivery routes at high speed to minimize travel distance, number of vehicles in operation, and CO_2 emissions, taking into account multiple conditions such as vehicle loading capacity, number of vehicles, and driver working hours.
In field testing, OptyLiner completed route calculations in 5 seconds which took several minutes to 20 minutes or more per calculation with conventional systems. The significant increase in calculation speed makes it easy to fine-tune conditions and conduct repeated simulations, also leading to less empty vehicles.
With its simple interface that emphasizes user-friendliness, and with delivery rules and conditions by business type prepared in advance, OptyLiner can flexibly meet wide-ranging needs at logistics sites.

06

Hometown Co-creation Initiative (Regional Revitalization)

Hometown Co-creation Initiative CLoV (pronounced "clove": CTC Local Vitalization) leverages IT to propose best practices for a diverse range of issues in communities involving local economies, populations, and employment, with the aim of creating towns where people want to live long-term. We are working to deliver solutions to challenges facing communities through cooperation agreements with 11 municipalities so far, including with the city of Nasu in Tochigi Prefecture and Uda in Nara Prefecture. These efforts include digital residence cards that establish and grow associated populations, on-demand transport that eliminates areas with poor transportation access, and contact points for all-purpose support via 24-hour AI chatbots. We are also involved in a smart city project for the city of Tainan in Taiwan, where we are applying expertise developed through these efforts. Going forward, we will continue working toward solutions to social issues, including multicultural urban areas and other city environments.

What Is the Hometown Co-Creation Initiative CLoV?
An initiative that aims to improve resident services and energize communities



Key Technology hero image

Announcing the Launch of the *Key Technology* (“Keys” for short) Website For Communicating Info from CTC’s Focus Areas

In Keys, we bring you expertise and the latest topics from CTC in an easy-to-understand format, focused on the four areas of Advanced AI, Data and Analytics, Cloud Native, and Security. We systematically compile explanations about technologies in each business area, solution introductions, and key points for using them, bringing you practical information that can help boost your competitiveness.

Information about events and seminars organized or sponsored by CTC will also be posted on a regular basis, offering opportunities for learning and interaction. White papers and reports can be downloaded, and video content such as verification reports and speech recaps will be added on an ongoing basis.

It will also bring you valuable information from each business group about brands, focus areas, and more, spanning multiple industries. We plan to add even more content to deliver useful information for your business going forward.

▲
Key Technology website is here.
https://www.ctc-g.co.jp/keys/

Principal Group Companies

Japan

CTC Technology Corporation (CTCT)
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://www.ctct.co.jp/en/

CTC System Management Corporation (CTCS)
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://www.ctcs.co.jp/

CTCSP Corporation (CTCSP)
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://www.ctcsp.co.jp/english/

CTC Facilities Corporation (CTCF)
1-2, Ninomaru, Tsuzuki-ku, Yokohama
https://www.ctcf.co.jp/

CTC Business Service Corporation (CTCBS)
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://ctcbs.ctc-g.co.jp/

CTC Business Expert Corporation (CTCBE)
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://ctcbe.ctc-g.co.jp/

Asahi Business Solutions Corp.
Asahi Beer Azumabashi Building, 23-1, Azumabashi 1-chome, Sumida-ku, Tokyo
https://www.n-ais.co.jp/

CTC Hinari Corporation
Kamiyacho Trust Tower, 4-1-1 Toranomon, Minato-ku, Tokyo
https://hinari.ctc-g.co.jp/

CTC First Contact Corporation (CTCFC)
Komazawa Nakamura Building, 16-7, Komazawa 1-chome, Setagaya-ku, Tokyo
https://www.firstcontact.co.jp/

Overseas

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