ITOCHU Techno-Solutions Corporation **CTC Group Report**

СТС FRONTIER 2024

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CTC UPDATE

CEO Message

The Grit to Boost Japan's Economy with IT

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 Notes on reported figures: Amounts reported are rounded to the nearest unit. · Reporting period: Fiscal 2023 (April 1, 2023 - March 31, 2024) *Some activities outside this period also included





more to people and society.





Since the era when computers were known as "electronic calculator," CTC has been deeply involved with information and data. Over the past half-century of our progress, information and data have merged with telecommunications, transforming people's lives. Now, in 2024, we, the CTC Group, are exploring a new vision for the future, aiming to become a company that contributes even

This is our "FRONTIER".

Editorial Policy

After the privatization by ITOCHU in 2023, we established our corporate identity in 2024 as embodied by "Challenging Tomorrow's Changes." As both the world and CTC continue to change, we publish the CTC Group Report "FRON-TIER" to communicate our journey from past and present initiatives into the future. Through interviews with chief officers and a diverse range of employees, we provide a high-resolution view of the CTC Group's current situation, and convey our direction in terms of the social issues we are addressing and our cutting-edge technologies. Our aim was to create a design and content that stakeholders would be eager to read.

We hope this report helps deepen your understanding of the CTC Group.

· Scope of the report: Includes information on CTC and its consolidated subsidiaries and affiliates

CTC UPDATE

Evolving Together with Technology

Everyone must constantly evolve and renew themselves in the pursuit of sustainability. We at the CTC Group also embody this mindset by taking on the possibilities of IT to shape a prosperous future, engaging in numerous projects that utilize both our technology and Waza (unique skillset), and challenging ourselves to deliver valuable services. While clarifying our vision is essential, the key question is "What is CTC doing right now to realize the vision." Here, we present our most recent efforts.

Building of an operation support system for KDDI's 5G SA (Standalone) wireless communication service

We have built an operation support system for KDDI's 5G SA (Standalone) wireless communication service. This system supports the stable operation of 5G wireless communication services. In the event of equipment failure or large-scale disaster, it identifies the location of the fault and the scope of the service impact, facilitating the rapid restoration of the service. Additionally, by enabling automated operation, the system ensures the stable operation of network systems and improves operation efficiency. It's failure recovery function instantly identifies the fault location and the extent of service impact, visually represents the process and response time until service recovery, and automatically executes the recovery process, thereby streamlining operations and reducing service restoration time. We will continue to expand services that improve the quality and stable operation of 5G communication systems, and contribute to the growth of our customers' 5G businesses



5G Operation Support



Launch of collaboration with Liquid AI in the development of edge AI solutions

We have embarked on a collaborative partnership with Liquid AI, Inc., a Massachusetts Institute of Technology (MIT) spin-off start-up, to develop edge AI solutions. Liquid AI's technology is based on a method called the Liquid Neural Network,* which enables highly adaptive machine learning with minimal processing power. Utilizing this, we aim to enhance processing performance in edge devices. With our expertise in building data analysis platforms, we will use the high performance and flexibility of Liquid AI's technology to further advance the development of edge AI and generative AI solutions.

* A model applying the neural network of a nematode's brain to machine learn ing. The compact model achieves the same computational capability level compared with conventional neural network models. It also excels at processing time-series data on edge devices through optimizing arithmetic processing. This can reduce computing resources, and is expected to significantly reduce power consumption and CO₂ emissions. **03** Generative Al

Launch of Generative AI Advisory Service, a consulting service for generative AI utilization

We have launched the Generative AI Advisory Service, a consulting service to support the utilization of generative AI. This service assists customers at every stage, from considering the use of generative AI, integrating it with existing systems, building systems including generative AI, to establishing its use after implementation. Additionally, we have started offering the AOAI Environment Development Service, which builds a conversational generative AI environment tailored to each corporate user using "Azure OpenAI Service" provided by Microsoft Japan Co., Ltd. This environment enables safe and secure search and learning from internal documents to provide responses specific to the company. CTC will expand our services related to the utilization of generative AI while complying to our Group's AI Ethical Principles to help customers further improve their operational efficiency.

"Microsoft" and "Azure" are registered trademarks or trademarks of Microsoft Corporation in the U.S. and other countries.

Diversified efforts to accelerate DX innovation in the financial industry

We are working on a wide variety of initiatives to promote DX for our customers in the financial industry. These include providing the Digital Marketing Assessment Service, which evaluates the effectiveness of digital marketing in financial product sales. Utilizing products from Aitomatic Inc. we have developed an Al investment advisory solution that offers investment portfolio recommendations. Furthermore, we offer advisory support regarding the generative AI guidelines created by the Financial Data Utilization Promotion Association (FDUA) for the financial sector. In October 2023, we joined the DID/VC Co-Creation Consortium, led by major financial institutions, to collaborate on business innovations that enhance the security of personal information etc. in financial institutions using decentralized identifiers (DID) and verifiable credentials (VC). Through the provision of these services and support, we are challenging ourselves in advancing DX in the financial industry.

* Co-Creation Consortium: Decentralized Identifier/Verifiable Credential Co-Creation Consortium

Financial DX

Launch of the CLoV Hometown Co-Creation Initiative

We have launched the CTC Local Vitalization (CLoV) initiative, a project focused on the social issue of regional revitalization through co-creation. By leveraging technology to tackle a range of issues related to community, people, and jobs, we offer best practices and collaborate on service creation, supporting the development of hometowns where people not only want to live but also can continue to live. The services provided by CLoV are integrated into a Comprehensive Behavior Information Platform, which links internal and external data and services to analyze behavioral information and support data-driven policy planning.



We work together to find the best approach to issues based on the technology we have cultivated over the years.

3 Thoroughly listen to the

voices of local governments, residents, and stakeholders

that align with the characteristics of each region, we gather firsthand input from everyone involved and work together to move initiatives forward.

Materials Informatics



Provision of cloud-based materials development platform by QuesTek Japan for Daido Steel

QuesTek Japan, a joint venture between CTC and QuesTek, provided Daido Steel Co., Ltd. with the cloud-based material development platform "ICMD® (Integrated Computational Materials Design)" to shorten the development period and improve the efficiency of the development process for high-performance special steels. ICMD® is packaged with proprietary materials models, process optimization and property evaluation tools, which enable simulation of how material compositions affect structure, strength, durability, and the like. The platform enables the development and analysis of materials that meet performance requirements with minimal data, broadening the scope of new material design and significantly reducing the time needed for material candidate selection. Additionally, based on our experience in providing services in various scientific and engineering fields, including heat treatment, ultrasound, and cutting analysis, we implement integrated thermodynamic calculation software to support simulations.

* Product names mentioned are trademarks or registered trademarks of their respective companies.





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Commitment on everything from implementation to results

We are fully committed to seeing each project through to impact analysis and continuous improvement by utilizing data to support.



A wealth of ideas and planning

Our team, which has created new businesses beyond conventional frameworks, proposes fresh concepts and service developments for the region.

First in Japan to establish a strategic partnership for the cloud ERP service "GROW with SAP"

CTC and SAP Japan Co., Ltd. established the first strategic partnership in Japan for the cloud ERP service "GROW with SAP." This service supports the use of "SAP S/4HANA Cloud, public edition," the public cloud version of the SAP ERP solution. Encompassing best practices, implementation promotion services, community engagement, and training, the service supports continuous growth and innovation for businesses. Through our proprietary solution Figues, which enables standard SAP implementations, we offer end-to-end support for the optimization and effective utilization of customer core systems and shifting to in-house business improvement. By further enhancing the capabilities of Figues and strengthen-

ing the training of engineers related to GROW with SAP, we will continue to contribute to our customers' operational efficiency and advancement of DX.



* SAP, the SAP logo, and all SAP products and services mentioned here are trademarks or registered trademarks of SAP SE in Germany and other countries.

Provision of "Communication Design" CX consulting service for Noritz

We provided Noritz Corporation with "Communication Design," a CX consulting service to enhance customer experience. This unique CTC consulting service involved organizing and analyzing issues and proposing improvements for Noritz's after-sales support website, updating the website's navigation design and user interface (UI). By evaluating the website's user experience (UX) and analyzing user behavior from their perspective, we reduced unnecessary navigation steps and users' giving up, leading to quicker problem resolution and repair requests completion, and contributing to improved customer satisfaction.







Development of the cloud service $\mathsf{PITWALL}^{\circledast \star}$ for streamlining and standardizing system operations

To take the development and operations experience to the next level, we have developed and launched PITWALL[®], a cloud service designed to enhance productivity, improve response quality, and address challenges faced by experts. PITWALL[®] offers a single-click solution to efficiently gather essential information, tailored to the development and operation environment, where accurate status monitoring and response are required, such as during system incidents or data loss. The service enables on-the-spot utilization of expert knowledge, reinforcing observability. By standardizing and automating information collection methods, it accelerates interdepartmental coordination and prevents extended incident response times. Moving forward, we will further improve system monitoring and recovery capabilities, with measures including the use of advancing AI technology, and contribute to enhanced response quality by operational personnel. PITWALL[®] supports the sustainable growth of customer companies by contributing to overall organizational improvement.

* PITWALL is a trademark of CTC, registered only in Japan.



Provision of digital twin solutions for GX in the manufacturing industry

We offer digital twin solutions to support green transformation (GX) in the manufacturing sector. This service recreates factory environments in a virtual space to conduct simulations aimed at reducing greenhouse gas (GHG) emissions and power consumption in production processes. CTC has long been involved in optimization, process simulation, and data analysis in the field of science and engineering, and has offered services to various customers in the manufacturing sector, such as production line workforce allocation, logistics center management, and traffic simulations. Based on our accumulated expertise, this new service is part of our GX solution to provide technical support for reducing company GHG emissions and improving energy efficiency.



Provision of "StateEco", a platform that visualizes waste management process for resource recycling

We have launched StateEco, a resource circulation platform that visually displays waste treatment processes. This sustainable solution promotes recycling by visually displaying waste materials such as metals and textile scraps, enhancing efficiency in waste processing and encouraging reuse. CTC provides comprehensive services from design to construction and operation of the platform. We will continue to contribute to a circular economy by expanding StateEco's availability to various industries, starting with the furniture sector.



Expansion of "ECSPice", corporate membership EC website, to cater to greater needs

ECSPice, a membership e-commerce website for corporate customers provided by CTC Corporation, a CTC Group company, has expanded its vendor base from 55 companies at its launch in December 2022 to 90 companies as of the end of March 2024. Membership numbers are also steadily increasing. ECSPice is a service that provides online quotations and sales for products previously sold through sales representatives, such as software and cloud services related to online communication, security, operational efficiency, and remote work. Individual quotations for products not listed on the website can also be provided, offering robust support for customer IT environment development to satisfy various needs.





Electric Commerce		
ECSPice CTO	Cエスピー 法人向けECサイト	の の の の の に 日 の の の の の の の の の の の の の
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カテゴリから探す	コミュニケーションツール	オンライン電話帳
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セキュリティ	•	
業務効率化		
オンラインコミュニケーシ ヨン		
基盤インフラ	•	
Other	•	
		https://www.ecspice.jp/shop/

CTC HISTORY

Half a Century of Supporting Japan's IT Industry

Since its founding, CTC has anticipated changes in the times, swiftly adopting innovative technologies to develop products and services, thereby contributing to the creation of a prosperous society. Our 50 years of service has also been a history marked by deep technical expertise, a commitment to meeting customer needs, and spirit of challenge. Leveraging our extensive, long-cultivated technical capabilities and global perspective, CTC continues to push into unprecedented territories to achieve sustainable growth and create new value.



Starting point for scientific and technical computing business Working on national projects behind the scenes and supporting Japan's high economic growth

In 1958, Tokyo Electronic Computing Service Co., Ltd. was established as a center providing advanced computing technology. At that time, Japan was in the early stages of rapid economic growth, and with the spread of information processing technology, scientists and engineers had begun using computers as important tools for advanced data processing. Tokyo Electronic Computing Service took on computing as a business, utilizing computers along with analysis and simulation technologies to support national projects behind the scenes to contribute to Japan's high economic growth. This became the starting point for CTC's specialization in scientific and technical computing.

Establishment of ITOCHU Data Systems Creating a market through customer satisfaction





CTC's Predecessor Company History

964

Involved in the Tokaido Shinkansen and the Tokyo Olympics

Involved in national projects such as structural calculations for Tokaido Shinkansen elevated track supports, structural calculations for the World Expo, and queue calculations for ticket gates at Olympic venues.

Establishment of CTC



Establishment of C. ITOH Data Systems Co., Ltd. as the IT subsidiary of ITOCHU Corporation (later to become CTC)

Leveraging our expertise in identifying high-potential technology, CTC introduced primarily US technologies and products, such as INFOREX, OPSCAN, and WANG, to the Japanese market. We conducted customization and development for these foreign products to be compatible with the Japanese language, and began supplying them. This led to the establishment of an office automatio business, from which we further expanded into the factory automation market



1959

1960

1958

Computing Service

Established Tokyo Electronic

(later to become CRC Solutions)

Started computer sales and contract computing

Introduced the Bendix G-15 system and launched contract computing business

Introduced the Bendix G-15, the first US-produced computer imported into Japan. This was used for tasks such as coordinate transformation for map creation, flight planning, railway operation planning, and structural analysis







for building roads and bridges. Involved in large-scale national

projects, including bridges, skyscrapers, roads, and shipbuilding.



Independently established 36 service centers across Japan

While increasing the number of new products we offerred, we worked on strengthening our support system. Through active investments, CTC deployed engineers nationwide and took on domestic inspection and repair for imported equipment, handling these tasks in place of foreign manufacturers. At the time, it was rare for a non-manufacturer to maintain its own independent support network



Relationship with Sun Strength in maintenance support to advance through the IT era together

In 1983, CTC identified the potential of the workstations of Sun Microsystems, which is a spin-off from Stanford University, and promoted their adoption earlier than our competitors. With advancements in IT and the diversification of business operations in the early 1980s, a shift was needed from conventional centralized processing using mainframe systems to a more flexible approach. With the advent of workstations, individual users could perform processes independently while sharing data with other workstations and servers over a network, enabling cost-effective and efficient data processing and analysis. CTC focused on Sun's open technology, providing customizations and intensive support for system building and maintenance. We improved our capabilities in server and application development, databases, and network technologies to strengthen our technical expertise to serve as a multi-vendor supplier





Introduced CRAY-1 supercomputer as its first commercial use in Japan

Utilizing its high-speed computing capabilities, CTC participated in numerous national projects, including the Honshu-Shikoku Bridge, space and marine evelopment, and nuclear energy projects.





983

Formed a partnership with Sun Microsystems, obtaining exclusive distribution rights for Sun workstations

Sun Microsystems significantly contributed to the development and spread of the internet under the slogan "The Network is the Computer." Sun introduced workstations, servers, the UNIX-based operating system "Solaris," and the programming language "Java," pioneering products and concepts that led the open technology movement in the IT industry.

CTC HISTORY



Expansion of network business A challenge in the world's first mobile data communications

With our in-depth expertise enriched in 1980s in networks, CTC became one of the first companies to provide dedicated network equipment manufactured by Cisco Systems in 1992, strengthening our network technology. As commercial internet emerged, CTC contributed to the rapidly expanding network business. Simultaneously, we established a dedicated internet division, deepening our technical expertise. CTC subsequently participated in various projects related to mobile data communications. In 1999, we supported the spread of the world's first mobile internet service. Since then, the telecommunications field has grown into a major pillar of CTC's business.

A challenging new global venture in the weather business: calculating natural phenomena with "supercomputers × weather"

The weather business began with the use of supercomputers. In 1996, CTC developed its own weather forecasting model and launched Japan's first internet-based weather information website. These advanced simulation technologies have been applied across a wide range of businesses, including ozone hole research, atmospheric pollutant dispersion calculations, nuclear disaster prevention, urban heat island countermeasures, wind and temperature forecasting, and wind condition analysis. These technologies have led to today's GX business, and continue to evolve.



Enhancement of the multi-vendor system Pioneering the future through business integration: From virtualization to cloud business

CTC established the Technical Solution Center (TSC), one of Japan's largest and most comprehensive technology verification facilities. With the rise of new technologies during this period, CTC focused on enhancing its expertise in connecting and integrating various products and training Linux and Windows engineers. TSC played an important role in supporting these efforts. Following the business merger of CTC and CRC in 2006, CTC began working on virtualization technology from an early stage. As the term "cloud" gained traction in the market, CTC launched "TechnoCUVIC," a public cloud service utilizing data centers in Japan. Anticipating technological innovations and market changes, CTC continued to grow significantly during this transformative era.

Transformation of technologies born in Silicon Valley into Waza (unique skillset) Entering ASEAN markets to strengthen business

In 2012, CTC acquired the US subsidiary of ITOCHU Corporation, which had established long-standing relationships with Silicon Valley companies, and began full-scale operations in North America. CTC continued to seek out new business opportunities, leveraging its expertise in identifying high-potential technologies cultivated through years of R&D in Silicon Valley. As part of our growth strategy to strengthen our business in ASEAN, CTC built an SI structure capable of covering the entire ASEAN region. This enabled CTC to offer flexible services to the ASEAN market, utilizing its development capabilities, maintenance and operations expertise, and industry knowledge.

Launch of CTC's proprietary security services leveraging comprehensive strengths Establishment of an AI business framework

Building on security technology and expertise developed since the early days of the internet. CTC expanded into comprehensive security services, including diagnostics, monitoring, and consultina.

Amidst evolving technologies, keywords related to AI, such as deep learning and machine learning, gained attention. CTC established a dedicated AI department, leveraging expertise in data building, analysis, and BI tools to strengthen support for AI utilization

"CTC-MSS"

1996

Launched Japan's first internet-based weather information website

Developed a proprietary weather forecasting model. Our expertise in advanced simulation technology led to today's GX business.

Began providing network products from Cisco Systems

Supported the spread of the mobile internet service

CTC established a dedicated team and participated in the research and development of mobile internet services. We were responsible for building core mechanisms and servers with functions to connect mobile phones to the internet and manage IP addresses. The growth in mobile internet users far exceeded expectations, and CTC was involved in the development of new servers to meet this demand, as well as in expanding new services

Launched "TechnoCUVIC," a public cloud service utilizing CTC's data centers in Japan

Released as an laaS-type cloud service utilizing CTC's data centers in Japan. CTC steadily grew its cloud business thereafter, which la evolved into "OneCUVIC."

ープンハイブリッドとつくる未来を Some CUVIC



Developed the localized weather assessment system "LOCALS"

Calculated wind flow patterns for the summit of Namcha Barwa (approx. 7,600m) in the Tibetan Himalavas, contributing to the first successful ascent of the mountai



Established the Technical Solution Center (TSC), our comprehensive technology verification facility

With the cooperation of various vendors, CTC developed our verification facility covering everything from system infrastructure, such as servers, storage, and networks, to middleware and applications. The facility was one of the most comprehensive in Japan at the time, symbolizing CTC's multi-vendor reach and expertise in connection and integration



ITOCHU Techno-Science

and CRC Solutions merged to form ITOCHU **Techno-Solutions Corporation (CTC)**

he corporate philosophy was changed to "Challenging Tomorrow's hanges

Simultaneously established the monitoring center "CTC-SOC" CTC Managed Security Services (CTC-MSS) CTC Security Operations Center (CTC-SOC)



Strengthening R&D capabilities in North America

ITOCHU Technology, Inc., a subsidiary of ITOCHU Corporation established in 1990, was made a consolidated subsidiary and later changed its trade name to ITOCHU Techno-Solutions America, Inc.

Building presence in ASEAN

- NETBAND CTC
- 2011 Established the Singapore branch
- Invested in Thailand's Netband Consulting Co., Ltd. (now CTC Global (Thailand) I td)
- Acquired Malaysia's CSC ESI Sdn. Bhd. (now CTC Global Sdn. Bhd.) and Singapore's CSC Automated Pte. Ltd. (now CTC Global Pte. Ltd.) as consolidated subsidiaries
- Acquired Indonesia's PT. Nusantara Compnet Integrator and PT. Pro Sistimatika Automasi as consolidated subsidiaries
- 2023 Opened Taiwan Representative Office

Launched own security monitoring service

Promotion of DX business A challenge in creating the future

With the arrival of the DX era, it has become essential for companies to actively leverage digital technology to maintain and strengthen competitiveness. CTC supports customers' DX initiatives through new technologies such as AI, data & analytics, Cloud Native, quantum computing, and digital twins, with a focus on exploring, realizing, and growing digital businesses together with customers. By responding swiftly to the complex changes that accompany DX advancements, CTC provides practical support to help client companies ride the wave of digitalization.

2024

Into

Unprecedented

Ferritories

Started "build service" and other **DX-related services**

Launched services to support DX, including "build service," a closely collaborative technology consulting service that explores, realizes, and grows digital business together with customers. Established a dedicated DX department as a cross-functional organization.

build service





Into Unprecedented Territories

An era has arrived where we do not wait for the future – we go out to meet it. This is why CTC will continue to build its ability to implement new value for the Earth and society.

Each of us, as inhabitants of this planet, must consider what we can do for a better tomorrow.

We will join hands with colleagues and partners, to boldly combine technologies, and create unprecedented systems and solutions.

In this challenge, there are no longer boundaries between fields.

Now, full speed ahead.

To make the CTC Group an even more indispensable presence for the Earth, society, and humanity.

Accelerating the Shift to CTC 5.0 (Intellectual Capital Management)

Al, quantum computing and other rapid technological changes are giving rise to new fields through the fusion of technology and academia. As these technologies are used in society, entirely new domains will emerge, driving more intense societal change. To contribute to such a society, support our customers, and grow alongside them, we have defined 'CTC 5.0' as our approach and management cycle, offering unwavering, full-scale support as we accompany them every step of the way.

Overview of CTC 5.0



Key Agenda 1 Advanced Technology Pursuit of advanced technology

CTC 5.0 is a management system that positions intellectual capital as the source of creative activity

CTC 5.0 will expand the foundation of our four intellectual capitals, quickly adopt and combine new logies and waza (unique skillset), and ultimately trans r enhance intellectual capital, which will be reinvested ablished, the cycle can be accelerated to develop a more robust management capital is accumulated, will enable the adaptation to environmental changes. Our aim is to update to CTC 5.0, with all CTC Group employees united in advancing the medium-term management plan.

Key agenda for CTC Group medium-term management plan (2024-2026)



Key Agenda 4

Intellectual Capital

Expansion of intellectual capital to support all other kinds of capital