

Special Feature 1

To Enhance Innovation Capability through Digital Transformation (DX)

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Recognizing the era in which DX critically affects competitiveness, Taisei Corporation is working on DX throughout the company, with keeping the reforms of production systems and workstyle as well as the development of new ways of interacting with society in mind.

A talk between Mr. Michiaki TANAKA, a professor at Rikkyo University's Graduate School for Business Administration, who is known for his research on leading DX cases around the world, and Mr. Hiroki FUKASAWA, Executive Officer and Chief of Corporate Planning Office, who serves as Chief Digital Officer (CDO) and the chairperson of the "Digital Transformation (DX) Promotion Committee", a company-wide organization, which explores digital transformation that enables the future Taisei Corporation to progress even more steadily.

Challenges in DX Initiatives of Taisei Corporation

FUKASAWA: Professor Tanaka studies companies and organizations around the world that have achieved outstanding results by using DX. Today, I would like to hear about examples of leading companies' efforts to think about our company's DX.

TANAKA: I have studied the activities of various leading companies, and excellent companies have something in common, whether they are digital native* or non-digital companies.

First of all, their way of using digital is very fundamental. They define what the axis of their business is and use digital to strengthen it. In doing so, they focus on enhancing customers' convenience and enhancing customers' asset value from the perspective of customers. At the same time, they use it to make it easier for employees to work and to increase employee engagement.

In the United States, initiatives based on stakeholder capitalism, including customers, employees, and local communities in addition to shareholders, began several years ago. I think it shows an approach that you start with customers and employees to think about how much you can strengthen your business.

FUKASAWA: Certainly, we need to remember it once again seriously so that we are not left behind in global competition.

For our company, the construction business is the backbone of the company and we will surely continue to develop it. However, I think the process of how we do so will change with the times.

In the past, employees' work hours were used as resources in a way to make jobs viable, but that will not work going forward. As a matter of course, improving productivity is an urgent issue.

We have been striving to improve productivity by transferring and consolidating some operations such as procurement and the preparation of construction drawings that used to be done at each project site to the head office. We have already been actively working to automate and streamline operations through the use of digital technology, and our company's production system is beginning to undergo significant changes.

Although, until 20 years ago, the number of skilled construction workers was more than 4 million, the number is

now less than 3.2 million. Further aging and a decrease in the number of workers are expected to continue. Therefore, we also have to go further into mechanization, automation, and robotization to improve productivity at project site.

TANAKA: The "TAISEI VISION 2030" sets out initiatives for three X's, that is, IX, SX, and DX. In fact, from what you have said, I see that Taisei Corporation has a very strong awareness of issues about DX. What triggered your accelerating DX?

FUKASAWA: The Ministry of Land, Infrastructure, Transport and Tourism designated 2016 as the first year of the productivity revolution to promote the wider use and establishment of i-Construction, resulting in the use of ICT in the industry to progress dramatically.

While our company had also been making preparations, such as research in this field and the automation of machinery, it prompted us to accelerate it further to start studying the automatic control of large heavy machinery and so on. For example, we developed "TiCraft*1" a system that automatically controls multiple construction machines and automatically carries out specified operations such as excavation, loading, and transportation. In this way ICT is now being used in a tangible manner at actual production field.

Meanwhile, skilled construction workers at our project sites are engaged in the construction business in a multilayered structure in the form of those hired by primary and secondary subcontractors. I believe that establishing DX among such subcontractors is the role of a general contractor because we coordinate the entire construction process. To this end, how do we cover the entire production system of the construction business and use DX to link them all?

The entire company is working to create systems and platforms for that with a sense of speed. The other day, we made substantial changes to a system called "Project Site Net" in which our employees and staff at the partner companies at project sites share drawings and key data for construction operations such as quality control and schedule control. This has been well received by our partner companies, who say they can feel the progress of DX.

*Digital native companies: Companies established in or after 1995 which provide services and businesses that are predicated on the use of IT and digital technologies

DX Initiatives That We Promote Together with Our Clients

TANAKA: Also in Japan, each general contractor seems to be working hard, and competition in the digital world will

become very severe in the future. First of all, I think DX should be speedy and comfortable. Shopping, for



example, is as simple as entering an automated convenience store, picking up what you want, and walking away. It's so comfortable that you may even forget you're shopping. Of course, the construction business actually builds structures, so I doubt everything will be digitized. However, I think how you connect with your clients will change.

FUKASAWA: Yes, I think so. We are in the built-to-order industry in which we start with the design of construction work after we received the order, and we have been focusing to produce and deliver products of better quality and higher satisfaction according to the work schedule while having meetings with the clients. In the future, we believe that it is important to provide services that enable us to manage buildings together with our clients, thereby extending their life cycles and sustaining their asset values over the long term. We are also working to maximize DX utilization in this respect.

There is a huge amount of data accumulated in the Company, including design, construction, and procurement. The goal is to aggregate innumerable pieces of

information, that have existed in a scattered manner and have not been shared, into a single database so that anyone could derive necessary information from that.

A building has a variety of events such as large-scale repairs even after the completion. For such occasions, we can identify the client's needs from the database or propose the optimal solution. We have established "**Life Cycle OS**"^{*2} that could be used for business after the completion of construction. **BIM** and IoT are integrated to provide necessary information services according to the lifecycle of a building. We want to take DX to a point where we can build closer relationships with our clients than ever before.

TANAKA: What is happening now with DX is that we can connect directly and digitally with each customer or client. The phrase "customer-centric" will now be coming to every industry as reality, not a mere message. Consumers can tell at a glance whether it is truly customer-centric, and that is exactly what is to be questioned.

And the word "connect" has become a more meaningful keyword. Even if you want to connect with a customer, they may not. What kind of company does a customer want to connect with? It is not a top-down company, but a flat, friendly company.

If you put yourself in the consumer's shoes, you'll see that quickly. I think it will be important going forward to build good relationships with your clients over the long term.

FUKASAWA: As you said, I think that will form the basis. We need to increase the number of fans of Taisei Corporation and receive orders continuously. It means building a win-win relationship that is not good only for us but also for our clients, doesn't it? I think it is important for all stakeholders to have sense of understanding and move in this direction.

with society, not just with the construction industry, we work on DX to reduce the load of skilled construction workers in light of the future trend in the labor force, and DX to provide the best services to our clients and end users.

The basic idea is indeed "DX for people." This kind of mindset should be further cultivated and shared throughout the company, shouldn't it?

TANAKA: I think so. How should Taisei Corporation be in 2030, what value should it provide, and what should it do for the next generation? If you have a clear sense of the mission and mindset, human resources education should also progress smoothly.

FUKASAWA: The speed at which we implement DX critically affects our competitiveness. Our company is also promoting the hiring of DX human resources and plans to develop DX human resources internally. However, there is a problem of insufficient knowhow to reskill employees to develop DX human resources, and it is also important challenge how to solve this problem. Our company has launched "**DX Academia**" as our proprietary system to develop DX human resources. I feel that Japan has some way to go to adequately develop education systems, etc., for DX human resources. How should the current situation be viewed compared to other developed countries?

TANAKA: I think Japanese society tends to think of DX as something special. For example, when I studied at Booth School of Business, the University of Chicago, one thing surprised me. People used data and mathematics to conduct advanced research at that time, too, but few of them majored in mathematics or computers in college. They have all studied liberal arts such as philosophy and sociology. There were many people who acquired fine education and broadened their perspectives in undergraduate studies, and came to the graduate school after gaining work experience.

I also studied a national human resources development program in Israel. Of course, there were young people with outstanding intelligence enrolled, but that's not the only thing that matters. It is whether they demonstrate leadership and excellent human qualities that the coaching side ultimately focuses on.



It is not the case that you can do DX if you are good at math. What's important is how heightened a sense of mission and awareness of problems each individual has.

FUKASAWA: Certainly, it becomes obvious what we should do if we have a clear sense of mission and problems. If digital technology is then needed, you can learn and use it according to the objective. I think it will make it much easier for each and every employee to work on.

TANAKA: Learning digital technology skills in a narrow sense is not so difficult in this age. On the other hand, people who do not have clear mission change what they're doing constantly. Such people do not have the consistent purposes and objectives between what they were doing yesterday and what they are doing today. In such case, even with digital technology, it won't lead to the kind of transformation we should be aiming for. In conclusion, I think the bottom line is that mindset education and liberal arts education are paramount.

When you think about what DX is all about, the key is to continue to pursue transformation. You should review your own issues seriously, update and execute your mission and vision according to the situation, and execute again. Repeating it will bring you closer to your goal. It's very important to have such mindset, and digital technology is the way to do it.

FUKASAWA: The transformation is to transform within an individual, that is, self-reformation. It was a very thought-provoking talk. Thank you very much for your time today.

Future Vision and DX Human Resources Development

FUKASAWA: Our company has established the **DX Promotion Committee**, a company-wide organization, and the entire Group is working towards DX. In this context, it is necessary for each division or headquarters to proceed with the transformation on its own. Are there any excellent examples of leading companies in your research, Professor TANAKA?

TANAKA: Looking at the examples of overseas companies, they begin with the idea of how to share mindset and values throughout the company. An organization is, in other words, a corporate culture. Walmart's success with DX, for example, comes from its efforts to reinvent its corporate culture. Making thorough thinking about the purpose of reinventing, which part of the corporate culture to be left as

an excellent point that represents your own personality, and which part needs to be changed. This is truly a change in mindset and corporate culture. It is a serious effort, however I think it is necessary for management to first develop a common understanding, then work on it throughout the company and share it with all employees.

FUKASAWA: Our company has set out "A pioneering corporate group contributing to the development of a resilient society where people can live affluent and cultural lives" as its medium to long-term vision in the "TAISEI VISION 2030." In particular, the "development of a resilient society" is a major mission of a construction company.

At the same time, keeping an eye on wider cooperation

*1 "T-iCraft"

T-iCraft is an abbreviation of Taisei ict Construction Robot Automatic Fit Team, and is a system that controls the coordinated operation of multiple autonomous construction machines.

*2 "LifeCycleOS"

LifeCycle OS is a building platform of Taisei Corporation that combines BIM and IoT to provide information services for various building users throughout the lifecycle of a building.

Special Feature 2

To Enhance Organizational Capabilities through Human Rights Due Diligence

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How can we put the concepts, SDGs and human rights due diligence, that are essential in the future global trends at the heart of the company and embrace them in a concrete manner? This is an urgent issue for the Taisei Group.

A talk between Jiro TANIYAMA, Chief of the Sustainability Division (Integrated), who was deeply involved in the formulation of the Medium-Term Business Plan (2021-2023) and pursues initiatives for the SDGs, and Ms. Emi OMURA, a lawyer with extensive knowledge on human rights issues around the world, provides an overview of the Group's initiatives and their effectiveness, and the future vision we should aim for.

SDGs and Human Rights

TANIYAMA: "The Medium-Term Business Plan (2021-2023)" under which we make focused initiatives over the three years with a view to realizing "our medium to long-term vision (TAISEI VISION 2030)" was kicked off last year. I myself was deeply involved in the formulation of this Medium-Term Business Plan and had many discussions. The term SDGs was indeed an important keyword in the process.

As you know, the SDGs were adopted by the United Nations in 2015. Meanwhile, even before we started using the term SDGs, we were deeply committed to the concept.

In 1990, our Company formulated the Taisei Group Philosophy "to create a vibrant environment for all members of society" which states that "We seek in an environmentally sustainable manner to create safe and attractive spaces with exceptional value and to create a global community filled with hopes and dreams for the benefit of future generations." It embraces the idea of "leaving no one behind" for the future, which is, I believe, truly in line with the concept of the SDGs.

In addition, our Company's structure of values and principles includes the "Taisei Spirit" and the "Overall Principles of Conduct." Chapter 1 of the latter advocates respecting fundamental human rights and diversity, engaging in neither discrimination in any form nor any

action in violation of human rights, and cultivating an open and vibrant corporate culture in which everyone can fully exhibit their capabilities. The idea of aiming for a society in which diversity and inclusion can be realized is nothing else but our spirit, and is also one of our goals.

OMURA: The preamble of SDGs affirms that the world's universal challenge is to realize human rights for all and to achieve gender equality. So when companies address the SDGs, they address human rights, gender equality, diversity and inclusion. And as Mr. TANIYAMA says, it is important to "leave no one behind."

Your Company's "Human Rights Policy" contains the "Fundamental Attitude towards Respecting Human Rights" in the beginning. It says "We, Taisei Group, contribute to the realization of an inclusive society by fulfilling our corporate responsibilities voluntarily, positively, and proactively so as not to cause adverse impacts on human rights in relation to our business activities." This is nothing else but the goal of the SDGs. The Medium-Term Business Plan clearly shows internally and externally that sustainability is one of the pillars of management, by paraphrasing in the SDGs terminology what you have been practicing over the long history since the foundation.

Initiatives for Human Rights Due Diligence

TANIYAMA: After all, the construction business is made viable by people. In that sense, it is necessary to assess risks and their impacts and to take appropriate measures in relation to **human rights due diligence** ("Human Rights DD" hereinafter) which has become a global standard.

The "Human Rights Policy" you just mentioned was first formulated in 2015. It had clarified our fundamental ways of thinking on human rights and we had been conducting awareness-raising activities regarding discrimination and harassment, mainly targeting our employees. However, Human Rights DD stipulated in the "Guiding Principles on Business and Human Rights" (the "Guiding Principles" hereinafter) established by the United Nations was expanded to cover customers, the entire supply chain in Japan and overseas, as well as local communities, and we understood a need to introduce Human Rights DD.

In 2022, we revised the "Human Rights Policy" and also

introduced Human Rights DD, and are working on it as a major task.

As part of this effort, we assessed human rights risks from the two perspectives of "impact on human rights" and "connection with the Company," taking into account the risks unique to the industry of construction business, and identified, systematized and evaluated human rights risks in the supply chain. As a result, it was the areas of long working hours, and health and safety that emerged as the biggest issues for us. The fact that these areas are posing major risks came to light once again through quantification.

It is a labor-intensive job, so it is true that there was a problem peculiar to the industry that people tend to work long hours in order to keep construction deadlines. However, in today's society, such a stance is not accepted. We recognize once again that it is a major corporate challenge to express in writing quantified consideration to human rights after thoroughly explaining this to our clients.



OMURA: The construction business has a very long supply chain and a wide range of stakeholders, from raw material production and procurement to community relations. Human rights risks, that is, potential negative impacts on the human rights of stakeholders, are also diverse. I believe you have been working to address the issues of employees' working hours and health and safety for a long time, however there is an increasing trend that you have to pay attention to it as far as the working environment of suppliers. Your Company formulated the "CSR Procurement Guidelines" in 2013, which was renamed the "Taisei Group

Sustainable Procurement Guidelines" in 2022, updating the content for items such as respect for human rights. Just like the "Human Rights Policy," I thought the measure was taken in line with the essence of the "Guiding Principles."
TANIYAMA: Yes, exactly as you have said.
OMURA: In the past, CSR was thought of as a company's fulfilling its responsibility to society on a voluntary basis, which is at a different level from legal obligation. On the other hand, the "Guiding Principles" clearly state that the risk of causing or contributing to human rights violations is a matter of legal compliance, which is a major difference. The fact that your Company has updated the human rights policy and procurement guidelines shows your Company's determined stance towards compliance in recognition of the "Guiding Principles."
TANIYAMA: Thank you very much. Even for the term of CSR, this is an era in which the approach of a company on a standalone basis such as "disciplining yourself" as used in the past is not good enough. We clarify our stance on fulfilling our responsibility to respect human rights and are building a mechanism for Human Rights DD through concrete initiatives. I believe that the next challenge is how to continue implementing these.

Attempts to Promote Human Rights DD

OMURA: Looking at trends overseas, there has already been legislation that makes the disclosure of the results of Human Rights DD, or not only the disclosure but also the implementation of Human Rights DD itself, mandatory. Although national discussion has not reached at legislative measures in Japan, the Ministry of Economy, Trade and Industry is developing cross-industry guidelines on Human Rights DD (as of July 2022). In this context, companies, like your Company, voluntarily promote and implement Human Rights DD initiatives, rather than implementing them because they are legislated or mandated to do so. Thus, I think it is very important to show excellent advanced examples.
TANIYAMA: I agree. It is not that you follow requests from outside, but you do so voluntarily from inside. Then, how to have it take root in the Company's culture. That is the main point. Meanwhile it is necessary to establish a solid system, and I believe that balancing the two is a new challenge.
OMURA: What do you think about embedding the concept in the internal culture?
TANIYAMA: Measures to prevent and mitigate human rights risks have been incorporated into the "Taisei Group Sustainable Procurement Guidelines," and we have been conducting awareness-raising activities for not only

the Group's executives and employees but also our suppliers through training and e-learning. In addition, we continue to conduct activities to ensure the effectiveness of Human Rights DD through surveys/ interviews and interviews with foreign technical interns to confirm compliance with the Guidelines. It is, of course, important to have the clear commitment of the top management as the background of this. The President himself has made it clear that management will not be able to succeed unless the Company respects the human rights of all people involved in its business and proactively resolves human rights issues. It is important to ensure that this way of this thinking takes root in all the executives and employees.
OMURA: What should be considered as a human rights issue continues to evolve as society changes. Your Company is updating it on a periodic basis and has delivered a very clear message that management centered on human rights be conducted as top management's commitment. The "Human Rights Policy" presents your fundamental stance to "contribute to the realization of an inclusive society by fulfilling our corporate responsibilities" as a construction company. I believe such clarification of the commitment of top management is also important to get the concept of human rights embedded in the Company.

Towards a Vibrant Future Society

TANIYAMA: The construction business is a business that is made viable only by receiving orders from clients. As for Human Rights DD, I think the important point will also be how our Company's initiatives are supported by our clients.
OMURA: Human rights are an issue for every company in the world. The recent trend is that your client companies will also get asked by investors and financial institutions whether they are monitoring the human rights situation on the side of construction companies. Companies that are evaluated by evaluation agencies for overseas investors, in particular, are requested to address human rights issues constantly and cannot escape this trend. By promoting Human Rights DD, human rights initiatives should be evaluated more positively, and it naturally results in increased business opportunities for your Company.

Your Company's "Human Rights Policy" clearly states that "We urge our business partners, including clients as well as subcontractors and suppliers, to support this Policy and respect human rights." This is also what is requested by the "Guiding Principles" and is a stance that global companies aim for. By enforcing the principle of "respect for human rights" through mutual leverage, I believe that we can progress towards the achievement of the SDGs on a global scale.

TANIYAMA: The idea is that taking a resolute attitude towards human rights is good for us, and at the same time, for clients.

OMURA: Yes, I think so. I believe that each company will gain a competitive advantage in the process of not only formulating a "human rights policy" and working on Human Rights DD, but also disclosing how effectively they work.

In that sense, the fact that we had this talk this time, and the fact that the Annual Report contains featured reports and more detailed descriptions in the SDGs field is progressive and wonderful.

TANIYAMA: The Taisei Group sets out a goal of "The Ever-Evolving CDE³ Company" contributing to the development of a resilient society where people can live affluent and cultural lives. I believe that the key to realizing this goal is to have our Company's role firmly recognized in society.

We will continue to pursue carbon neutrality and environmental measures, promote diversity and inclusion for further



diversity, enrich the lives of many people in comfortable workplaces, and expand the happy lives of our clients, together with the structures we create and provide. I believe the above attitude is the starting point of our *monozukuri* (precisely speaking, superb craftsmanship).

OMURA: The construction business is very closely connected to where people reside and live and what people do in their lives. This is why your Company has been able to continue your corporate activities with people at the center and with your thoughts on the lives of each individual.

Under the "National Action Plan on Business and Human Rights" formulated by the Japanese government in 2020, companies are expected to "formulate human rights policies," "implement Human Rights DD," and "establish a mechanism for remedies." Regarding a mechanism for remedies, your Company already has a Corporate Ethics Helpline System that is recognized by your partners. A system has also been established to listen to the voices of workers in the field through monitoring and other means. I believe that dialogue with local communities has been practiced, and I hope that such dialogue will be further enhanced and disclosed.

Of the many meaningful activities, I think there are only a few that are visible to outsiders like us. You can lead the industry by actively disclosing your activities. I would also like to see your Company develop how a Japanese company should be and present a new and vibrant path for Japanese society as a whole.

TANIYAMA: Thank you for your valuable advice. Thank you very much for your time today.

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For more information, please visit our website.

