

# Special talk

## SPECIAL TALK

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## Vigorous Communities for the Future

—Utilizing Data and Developing People—



The world is overflowing with vast amounts of diverse data — it is no wonder this has been said to be the age of Big Data. Data science is a methodology for processing and analyzing this vast amount of data, extracting useful information, and translating that to social and business solutions. The importance of data science has grown, and hiring talent well versed in fields such as statistics, data analysis, and programming has become a common issue in a wide range of industries. Recently, universities around Japan have been establishing new data science departments in rapid succession, but the first in the country was the Faculty of Data Science at Shiga University established in April 2017. Shinya Kubota, President of Shiga Bank, talked with Akimichi Takemura, President of Shiga University, on the theme of “Vigorous Communities for the Future— Utilizing Data and Developing People—” and asked his opinions on subjects including the paradigms of businesses utilizing data, developing talent emphasizing human capital-focused management, and activating communities through industrial-academic partnerships.



### Establishing Japan’s first Faculty of Data Science

**Kubota** What is the background behind establishing the first Faculty of Data Science in Japan?

**Takemura** Originally the University had faculties of economics and education, but as a National University it had a vision to expand its scope of education, so the President at the time, Takamitsu Sawa, set out to establish a faculty of data science that integrated the humanities and sciences as he determined that it met the needs of society. I had a connection with the former President as he was my senior in a seminar at the Faculty of Economics, the University of Tokyo, so he contacted me and I left the University of Tokyo and became the faculty’s first Dean.

**Kubota** Shiga University is expected to develop promising talent as a local national university.

**Takemura** Shiga University’s Diploma Policy (requirements for graduation and degree-granting) seeks to develop human resources with five traits including a “global view and mindset,” the “ambition and ability to contribute to the development of regional communities,” and “intellect that combines both the humanities and the sciences.” We strive to develop human resources who can contribute to the sustainable development of society and create new value to pave the way for a new type of society.

**Kubota** I know you are from Tokyo, but what do you think Shiga Prefecture’s appeal, strengths, and challenges for growth are now that you live here?

**Takemura** The prefecture has a lush natural landscape that includes Lake Biwa, and rich tourism resources such as historical Buddhist temples and Shinto shrines, Hikone Castle and many other castles. It is also the distribution hub with key junctions of east-west transportation between the Kansai and Chukyo regions, and it has many factories, well-developed industry, and a strong manufacturing industry. The region has considerable appeal, but I wish it promoted its tourism resources a little better. Students come to the university from the Kansai and Chukyo regions, Fukui, Gifu, and other areas, and there is vibrant cultural exchange and a bright atmosphere.

**Kubota** I greatly appreciate you undertaking the development of talent that contributes to the advancement

of regional communities, as well as the development of global talent. The mission of regional financial institutes including the Bank, is to activate the regional community and economy and enhance sustainability, so I would be happy to work with your university’s students and alumni.

### Activating the region with data

**Kubota** In today’s highly uncertain world, management that strives to achieve targets by repeating the cycle of forming, executing, and testing hypotheses has been criticized as inefficient. Handling data that serves as evidence in forming hypotheses is important, but in the business setting, today people often rely on past experiences. What do the students study in the Faculty of Data Science to make use of data in business?

**Takemura** We offer Data Science Subjects that integrates data engineering subjects in which students study information science and programming with data analysis subjects in which students study statistics and mathematics, and Value Creation Subjects in which students study economics and business management subjects and learn about case studies of value creation in a wide range of fields. Students not only process and mathematically analyze data, but also take on the challenge of creating new value, such as by collaborating with companies to use analyzed data in actual business.

**Kubota** The rapid progress of digitalization is stimulating data use, and in terms of human capital-focused business, reskilling into IT fields has become active within companies in recent years. Actually, the Regional Banks Association of Japan, of which the Bank is a member, started holding a financial services course last year called Introduction to Data Science in collaboration with your university, where participants learn the basics of statistics, data analysis, and other areas. Last time it was only held online, but this summer we will hold a hybrid course where people can participate either online or on your campus. Our employees will also attend.

**Takemura** In training programs, it is important to use data participants are interested in and set themes related to their business operations. In last year’s course, a lecture by an alum of the Faculty of Data Science who started their own business received high praise.

## SPECIAL TALK



### Human resources development and data-driven management

**Kubota** The staff member who returned last year after completing the two-year course of study participated in the “Financial Data Application Challenge,” a data analysis competition sponsored by the Association for the Promotion of Financial Data Application, where he competed in building a model to predict delinquency using data such as customer attributes and account information of mortgage borrowers.

**Takemura** That’s wonderful news for our university as well.

**Kubota** With the relaxation of banking regulations and advancement of social digitalization, I strongly believe that we need to break out of conventional ways of thinking. Producing new, forward-looking businesses requires logical thinking and thinking that integrates the humanities and sciences. I want to develop human resources capable of thinking in this way and create not only a new organization but a new organizational culture. The approach of data-driven management in which data is utilized in decision-making will become even more important, won’t it?

**Takemura** Making use of data means to make decisions showing evidence. But data is always something from the past, so making a decision based on business sense and analyzed results is crucial for trying new things. Showing evidence for the basis of your decisions is likely to be persuasive to those around you.

**Kubota** In other words, we need to make decisions based on logical thinking.

**Takemura** In addition, we also need to leverage Japan’s strengths. The manufacturing floors of Japan are filled with

highly skilled people even though they have not undergone digitalization. Due to their extremely high skill level, if we combined manufacturing floor wisdom, experience, and intuition with data, I think the Japanese economy would be even stronger.

**Kubota** The stone structures of ancient Japanese castles remain completely intact — that has more to do with the experience and intuition of craftspeople than data. In Shiga Prefecture there used to be a group of stonemasons who were highly skilled in a stonework technique called *anoushu*. I think Japan has a tradition of outstanding craftsmanship, especially in the field of building.

**Takemura** Make sure to pass down traditions utilized on the manufacturing floor while researching what can be analyzed scientifically with data. Applying yourself to improving your skills while watching your mentor is important, but it is also important to digitalize what you can, consider the two approaches separately, and combine the two. We also need to visualize the strengths that have been passed down without being digitalized.

**Kubota** There are companies, particularly among SMEs, in which the president conducts business on intuition based on many years of experience. We deliver business digitalization proposals through IT business support and other services, but have yet to venture into the field of data utilization. It is difficult to visualize expected effects, such as what extent data utilization contributes to business performance. We need to deliberate on ways to move forward with data utilization. For example, companies and universities could share information and work together as a consortium.

**Takemura** SMEs are also required to undergo a digital transformation (DX) to boost productivity, but it cannot be done overnight. It is important to enhance human resources’ skills through classes and other means.

### Driving industry-academia cooperation

**Kubota** What do you think your university needs to continue being a frontrunner in the field of data science?

**Takemura** In a word, industry-academia collaboration. It has been pointed out that data science is not only needed as an academic discipline, it is also needed to promote Japanese industry, so university education is directly linked

to enhancing the competitiveness of Japan. This means that analyzing and utilizing actual business data in industry-academia cooperation is effective in improving the quality of research and solving business problems. In March 2018 our university started a Community Connections Coordinator Program. The initiative aims to activate communities by inviting industry representatives to serve as a bridge with the community and utilizing university educational and research resources. Your bank has also introduced us to companies with needs.

**Kubota** Our bank served as an intermediary in the partnership between an Osaka-based logistics service provider and the Center for Data Science Education and Research, Shiga University (the Data Science and AI Innovation Research Promotion Center from April 2022). I hear they researched inventory optimization and other topics. You must have done joint research with many companies so far.

**Takemura** We have worked with a wide range of industries and research topics. For example, we analyzed maximizing sales opportunities by optimizing shipping routes with a company that fabricates and ships stainless steel. We made proposals on improving mobile coupon distribution in a joint research project with a company that operates supermarkets. With a food manufacturer, we identified causes of sales volume fluctuations and analyzed data to forecast volume. We also developed a method to produce road images with a major auto manufacturer by incorporating road information from on-board cameras, and analyzed factors in metalworking quality.

**Kubota** You also worked with our bank to analyze the economic impact of COVID-19 on different industries based on payment data. I hope we can work with your students on data analysis that will benefit the region.

### Shiga University startups to energize the region

**Kubota** Besides conducting joint research projects with companies and the government, you also cultivate startups at Shiga University, correct?

**Takemura** We certify and provide support to companies established based on new technologies and business

methods from our university’s education and research as a “Shiga University Startup.” We have certified five companies so far. The first was EVCARE Corp., established in January 2019. They operate a stress check business that uses hair and a counselling (mental health) business. Then we certified mitei, LLC which provides data analysis, market research, and consulting; KimiLab, LLC which provides learning support and develops and sells teaching materials; Dknowledge, Co., Ltd. which develops products with AI; and Mira-Kan, LLC which operates a data analysis business and data analysis consulting business.

If we cultivate startups not in the capital area but in regional communities, it will contribute to regional revitalization, so we are seeing more success stories and I think things are going well.

**Kubota** EVCARE and mitei were awarded the Shigagin Nonohana Prize. Also, Dknowledge is operating a business in collaboration with our Digital Promotion Office.

I look forward to working together to build an ecosystem that produces more and more promising startups.

### Activating communities from a wide range of fields

**Takemura** Your bank has provided support not only to the business field, you have also provided aid to the Music Education Support Center (known as “Otosapo”), the Faculty





## SPECIAL TALK

of Education, Shiga University. Established in October 2020, it is one of the rare research facilities even across the country that specializes in music education for disabled children. It offers music education programs that focus on disabled children, and provides support for musical activities.

**Kubota** You're talking about the Shigagin Welfare Fund grant. I hear Otosapo purchased a marimba with the fiscal 2022 grant and is performing across Japan. I believe that in addition to the regional economy, it is also important to invigorate the region in the areas of welfare and culture.

**Takemura** Our university is also focusing efforts on providing recurrent education to working adults. We have a diverse lineup of courses and are working to develop human resources who will support society in the future. In addition, in fiscal 2021 we established the Junior Data Scientist Training School in collaboration with the Hikone Chamber of Commerce and Industry and others. The school teaches elementary and junior high school students subjects such as programming and the basics of data analysis. We wish more startups of data science would grow here in Shiga Prefecture, but it tends to be easier to establish startups in major cities where there are vast amounts of information and active exchange between people. But recently there are cases of students at our university working part-time at IT companies in Tokyo online, so I want people to make use of the convenience of remote working and digital technology more.

**Kubota** As I mentioned earlier, we have an employee who has studied data science and won awards in competitions, so I hope to continue collaborating with your university to cultivate employees who will produce results. I think the biggest issue for companies is human resource development. Next-generation talent that excels in the digital field is especially needed. Currently we are upgrading our core system, but we see this project as more than simply replacing the system. We see it as an opportunity to develop next-generation talent and have assigned many young employees to the project.

**Takemura** Recently generative AI technologies like ChatGPT have been in the spotlight, and our university is conducting research on topics such as how to use it safely. Generative AI can write text and create pictures like a human, but its

achievements are based on mainly on data from the West. I've been thinking if we can work to integrate digital technology and art using data based on Japanese culture. I would be interesting if we could create a system that provides tourism information in line with individual needs to tourists to promote tourism resources. My dream is to make Shiga Prefecture known as the leading region for data science. Shoots of new business are emerging little by little, so I want to help them grow.

### Requests for Shiga Bank

**Kubota** Do you have any requests for our bank to activate the region?

**Takemura** It would be helpful if you could help match students and businesses so that students could help local

SMEs with digital transformation. It wouldn't be volunteer; they would do it as a job. I think it's important to provide the experience of translating what they learn into business. In this way, students would be able to become more involved in the community, and in the future become human resources who activate the region.

**Kubota** Our bank also operates a human resources placement business. Currently it doesn't apply to students, but I would like to think about doing a new business in collaboration with your university.

**Takemura** And I also hope you show your strengths as an information and knowledge industry company, since regional banks have the most detailed, concrete information about the state of the regional economy.

**Kubota** It's important to visualize and analyze what data a bank has, how it is used, and how it could be utilized

in business strategies, and translate that into action. The Group has a think tank called the Shigagin Economic & Cultural Center that analyzes the regional economy based on government and other data. If we can utilize the data we have more, I think we could engage in business with even higher added value. By utilizing data, we can develop human resources who can activate the region. I truly believe that data utilization and talent development can lead to solving regional problems.

I hope to continue this mutually inspiring relationship with your university. Thank you very much for joining me today.

