

## Further Revolutions with Technology: 4.0 to 5.0

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A: Hello. I'm Ayaka Onishi.

B: I'm Atsuto Harada.

C: And I'm Mio Kuhara.

ABC: We are from Tokuyama KOSEN.

A: There are various departments in KOSEN all over Japan, and our department is called the Department of Information Electronics Engineering. In this department, we learn not only programming but also ICT technologies such as computers and networks. Now, the theme of our presentation is Further Revolutions with Technology: 4.0 to 5.0. Do you know what society 4.0 and 5.0 are? Actually, the numbers represent the social trends in Japan.

B: Society1.0 is the "hunting society," Society2.0 is the "farming society," Society3.0 is the "industrial society," and Society4.0 is the "information society," which means the modern society we live in now. What about the society of the future, Society5.0? It is said to be a society where science and technology have advanced further than today, and where real space and virtual space are mixed.

C: Society 5.0 is also called a "super-smart society" or a "creative society," a society that creates value by solving social issues such as overcrowding and depopulation through the fusion of digital innovation and the imagination and creativity of various people.

A: Modern society faces a variety of challenges. For example, global warming, food shortage, food waste and disparities among regions. The realization of Society 5.0 is an attempt to create a sustainable society that aims to solve these issues by making full use of cutting-edge technologies such as the Internet of Things (IoT), big data, and AI. Smart cities are considered to be the leading realization of Society 5.0.

B: Smart cities aim to realize cities and regions where "no one is left behind" and "each person can enjoy optimal services." What exactly does this look like? We are going to introduce some examples of smart cities that are actually being implemented in rural and urban areas.

C: The major challenges facing rural areas are the declining birthrate, aging population, and depopulation. In order to prevent crimes and incidents targeting mainly the elderly and children, which are increasing due to these issues, some municipalities in Mie Prefecture have installed cameras in various places in the city to keep an eye on the safety of the city. This can prevent incidents in places where safety cannot be adequately ensured due to depopulation and lack of human presence.

On the other hand, in urban areas, traffic congestion and accidents caused by heavy traffic are a problem. In Ibaraki Prefecture, for example, traffic volume is predicted in advance by AI and traffic signal and lane control is implemented.

Various other efforts are already underway to solve the problems faced by each region.

A: Now, we would like to show you an example we worked on.

Shunan City in Yamaguchi Prefecture, where we live, is facing an issue. It is the "complexity of data management."

In Shunan City, a food bank is set up in a supermarket for residents to donate food that they do not eat. The food is then collected by a company called "Chutoku Holdings" and distributed to households, facilities and organizations in need.

In this process, a record of the food collected from the food bank assigned an eight-digit number for each food item, and all of them are written by hand on a designated piece of paper. The workload is enormous when the number of food items collected at one time is 100. The problem here is that the numbers are written incorrectly. When writing down the numbers of dozens of products at a time in large quantities, it is easy to get the order of the numbers wrong or to write down numbers that already exist.

How can we solve this issue?

B: We thought that simplifying the work and managing it electronically would reduce the amount of work and make it easier to manage.

To accomplish this, we developed software by programming, devising ways to make it easy to operate even for those who are unfamiliar with computers, and proposed it to the municipality. The software has not yet been put into practical use, but once it is, we would like to make improvements based on feedback from users to make it even better.

C: We spend five years learning the skills and knowledge necessary to actually give shape to what we envision in our minds and make it a reality. Imagine that KOSEN is a box. Inside that box are the knowledge and skills of each of us, students and faculty members, and a wealth of ideas. The creative possibilities are infinite by combining what is in this box. Our creativity is unlimited and we can create something new from scratch. Through this experience, we have come to realize the necessity of this idea box and the importance of city planning according to the needs of each region.

A: Each region has different challenges and needs, and the smart city to be aimed for is different. Our goal is not just to urbanize with high technology, but to create a society where people can live happily and with smiles by finding issues together and solving them using new technologies and data, while respecting the values of the people in the community.

B: "Further Revolutions with Technology: 4.0 to 5.0".

The day when Society 5.0 becomes our new normal may not be far off.

ABC: Together with technology, thoughts, and KOSEN students, further revolutions are dawning. Thank you for listening!