



Creating Innovation Driven by Social Needs Anchored in the Future

Kiichiro Miyata

Director, Senior Managing Executive Officer, CTO

Over the years, OMRON has introduced numerous world-first innovations driven by social needs, including the non-contact switch, the automated ticket gate, and many others. How has one company been able to come up with innovation after innovation? One key is the backcasting method of technology management practiced in our company beginning with our founder. OMRON established the position of chief technology officer in 2015 in response to the increasingly disruptive changes in society and technology. In our CTO position, we have recreated that technology management as practiced under the keen insight of our founder. In this special feature, we discuss creating innovation driven by social needs with CTO and OMRON technology leader Kiichiro Miyata.

— **Three years have passed since you were named OMRON CTO. Can you tell us about your thoughts when first named to the position and your experiences to date?**

OMRON is a leading technology company that searches for solutions to customer and social issues proactively through technology development. The result is a unique collection of nearly 90 business units, ranging from several hundreds of millions of yen in sales to several billions. In 1999, we adopted an internal company structure, with each business division responsible for its own technology strategy. Under this structure, we experienced a significant leap forward in the sophistication of our division technologies. Over the past several years, however, we have seen rapid innovations in AI,

IoT, robotics, and other new technologies. The environment surrounding our businesses has changed dramatically. To respond quickly and flexibly, we felt the need for a cross-organizational approach, establishing the position of CTO to oversee group-wide technology strategy.

As the first OMRON CTO, I have been responsible for developing our approach to technology management and formulating an OMRON-wide technology strategy to implement over the long term. I believe we have set OMRON technology management on a solid course over the past three years.

— The technology management you mentioned is regarded as a subset of general business management. What makes the OMRON style of technology management unique?

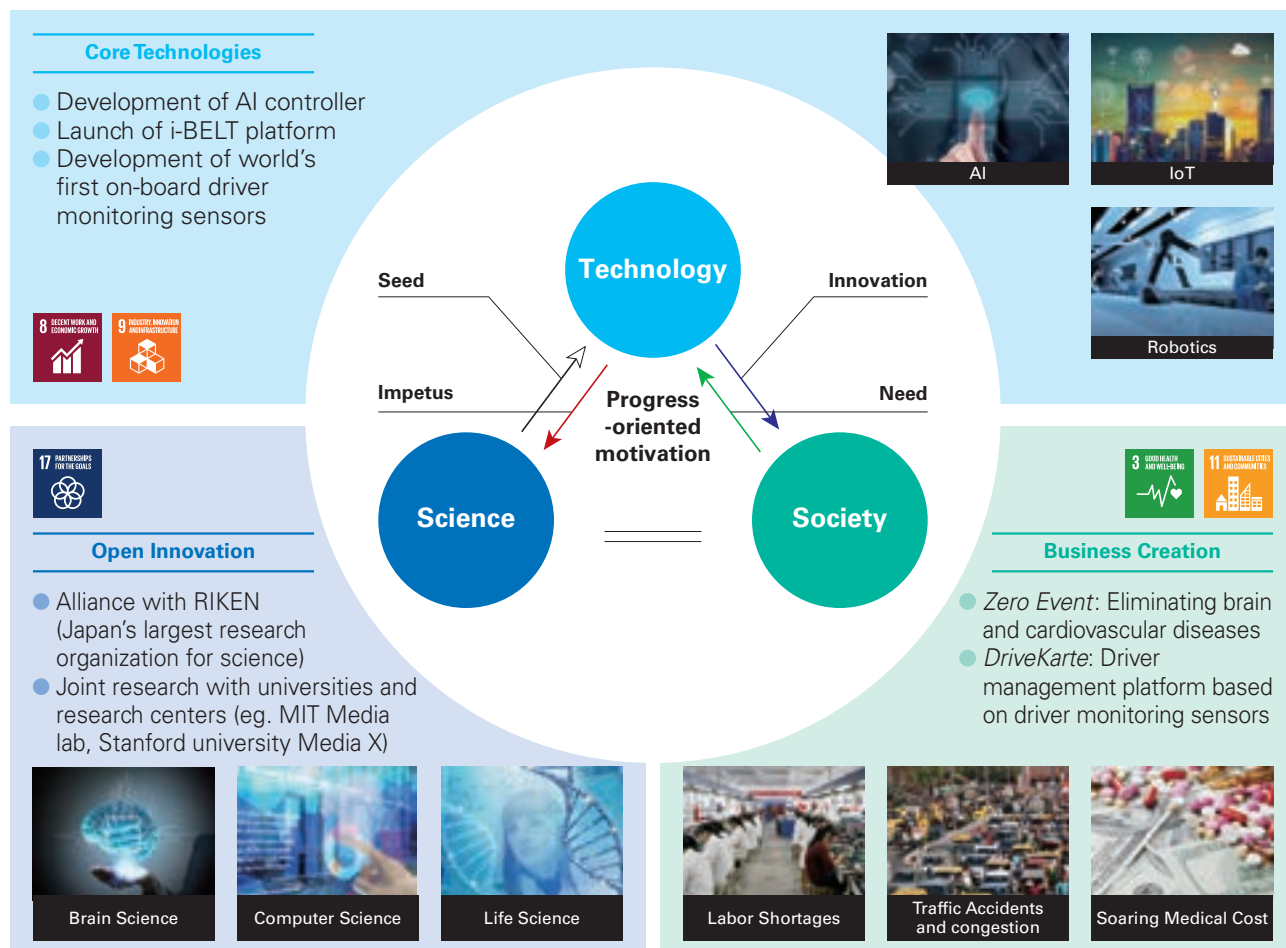
Technology management at OMRON relies on technology innovation to perform near-future design tailored to solving social issues. We then outline and execute the strategy required to realize this future design. The foundation of our approach is the SINIC predictive theory espoused by our founder, Kazuma Tateishi, in 1970.

SINIC predicts how the interplay among science, technology, and society changes the future social order and propels further social evolution. New developments in science result in new technology. New technology brings about change in society, which give rise to new social issues. These issues drive more technological innovation, which impacts science. At OMRON, we work to solve customer and social issues

arising in the interplay among these elements. In other words, we create businesses based on signals from society.

Under VG2.0, we exercise technology management with a focus on the three areas related to science, technology, and society: Open innovation, core technologies (cross-organizational and business-specific), and business incubation through trial-and-error. I think our efforts in these focus areas have been successful so far.

Basis of OMRON Technology Management and Fiscal 2017 Highlights



— **In the three years since being named CTO, you have been able to create an effectively functioning technology management framework. As CTO, what do you see as the next task for OMRON growth?**

We must speed our pace of creating innovation driven by social needs if we are to deliver new value for a better society.

I mentioned earlier that OMRON is a collection of nearly 90 businesses. We have exercised a degree of portfolio management in consolidated some of those entities. Now, we need to create new businesses to take their place and drive continued growth. In other words, management at OMRON is concerned with producing new value from every corner of our organization, leading to new products and services that become an indispensable part of society.

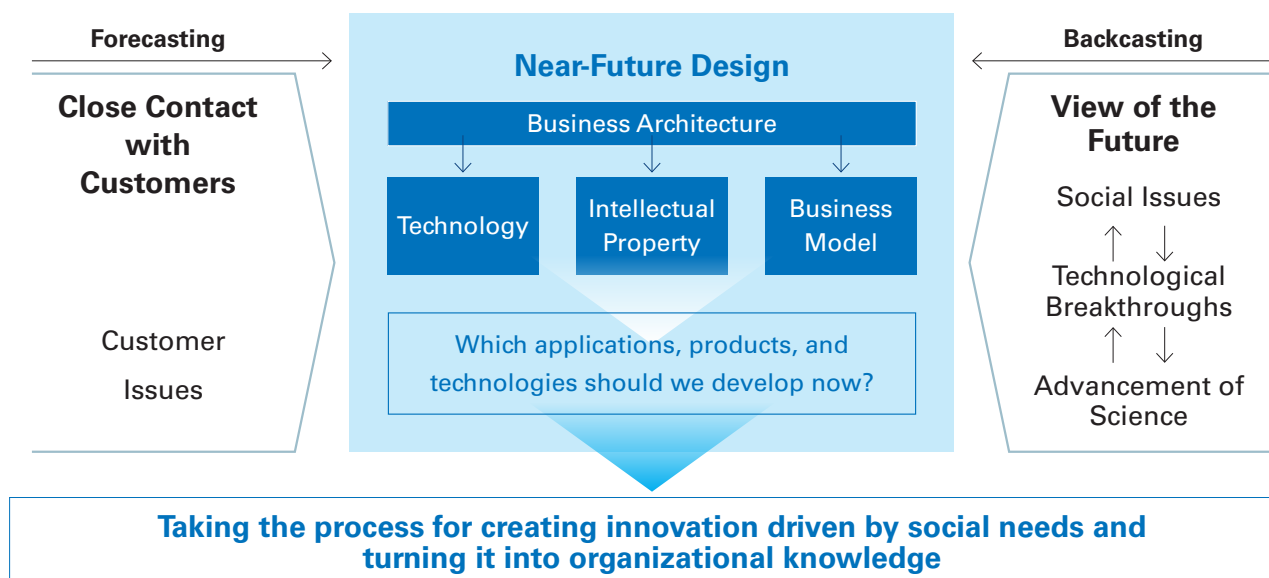
We are building frameworks and organizations that support new value creation, making the process of innovation driven by social needs part of our organizational knowledge. This process consists of forecasting and backcasting. Traditionally, OMRON has been skilled in identifying social needs and then backcasting to create unprecedented value. Under our company structure, however, we began focusing mainly on forecasting. Now, backcasting will have a comparatively greater weight in our technology management process.

To support this initiative, we created the Innovation Exploring Initiative HQ, or IXI, in March 2018 as a company-wide innovation platform. IXI has all the resources it needs to backcast innovation driven by social needs, providing end-to-end oversight of the process. As a platform, IXI will work with entities both inside and outside our organization to raise the output of innovation at OMRON.

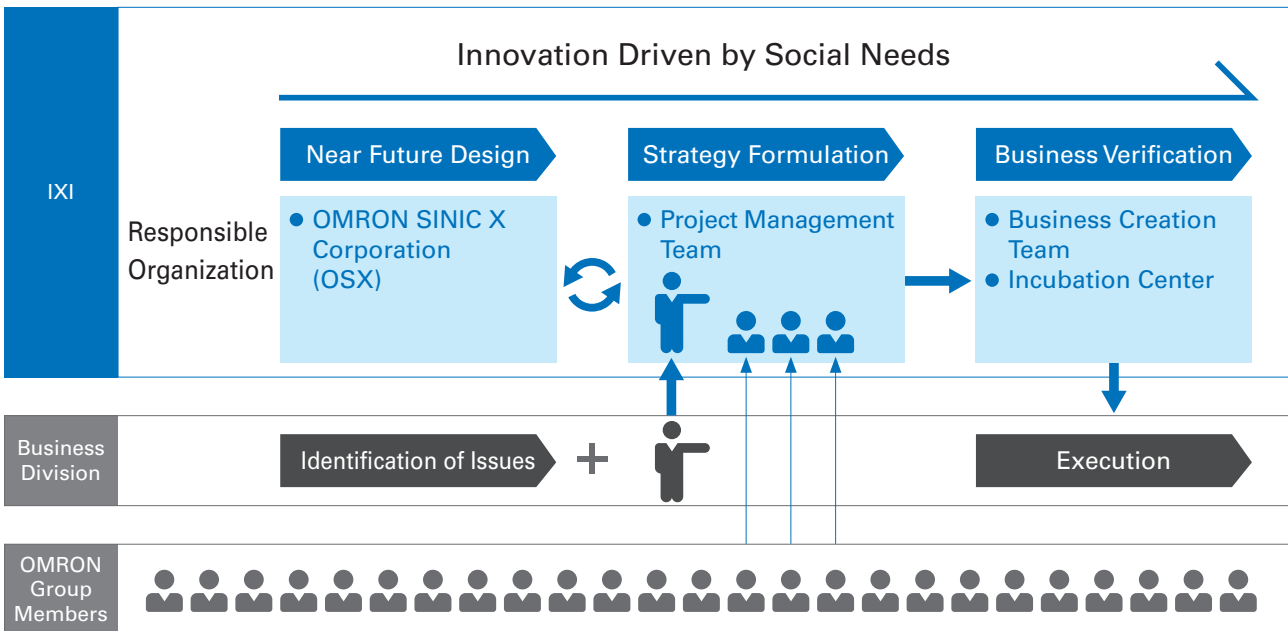
*1 Forecasting: Develop business and technology to solve current customer issues and needs

*2 Backcasting: Develop business and technology based on the near-future design for the next three to ten years, anchored to our future vision of social issues, technological innovation and development in science

■ OMRON Technology Management



Innovation Exploring Initiative HQ (IXI) as Group-Wide Innovation Platform



— Many other companies have set up organizations to promote innovation, some more effective than others. Why do you think innovation acceleration initiatives are proving successful at OMRON?

For many years now, OMRON has used a process template for backcasting to create innovation driven by social needs. Another big factor is our ingrained corporate culture in which employees take the initiative to do courageous things.

This process template was in the mind of our founder, an amazing entrepreneur. He was both businessperson and engineer, combining both aspects to identify signs of change in the world and develop a super-specific image of the future. At OMRON, we call this *near-future design*. We contribute to a better society by developing technologies and products necessary to achieve near-future design, incubating businesses that become an indispensable part of society. What we will do is take the concept of backcasting near-future design for innovation driven by social needs, which existed as tacit knowledge in the mind of our founder, and convert it into a process based on explicit knowledge for use across our organization.

As an example, let's look at the **innovative-**Automation and *Zero Event* goals we are pursuing through our Industrial Automation Business and Healthcare Business. We have backcast from a near-future vision to start businesses in factory automation and healthcare domains. We will roll this process out across our entire group in the future.

The OMRON Principles play a very big role in our corporate culture, which is one of our major strengths. The OMRON Principles espouses three important values: (1) Innovation Driven by Social Needs; (2) Challenging Ourselves; and (3) Respect for All. These values have taken hold in our employees. When we challenge them to create innovation driven by social needs, many respond enthusiastically, without fear of failure. We remain committed to incorporating ideas from outside our organization, and we have embraced open innovation.

> Value Creation Model (P6)

> Message from the CEO (P8)

Vision

Strategy

Business

Governance

Financial Information

Corporate Information

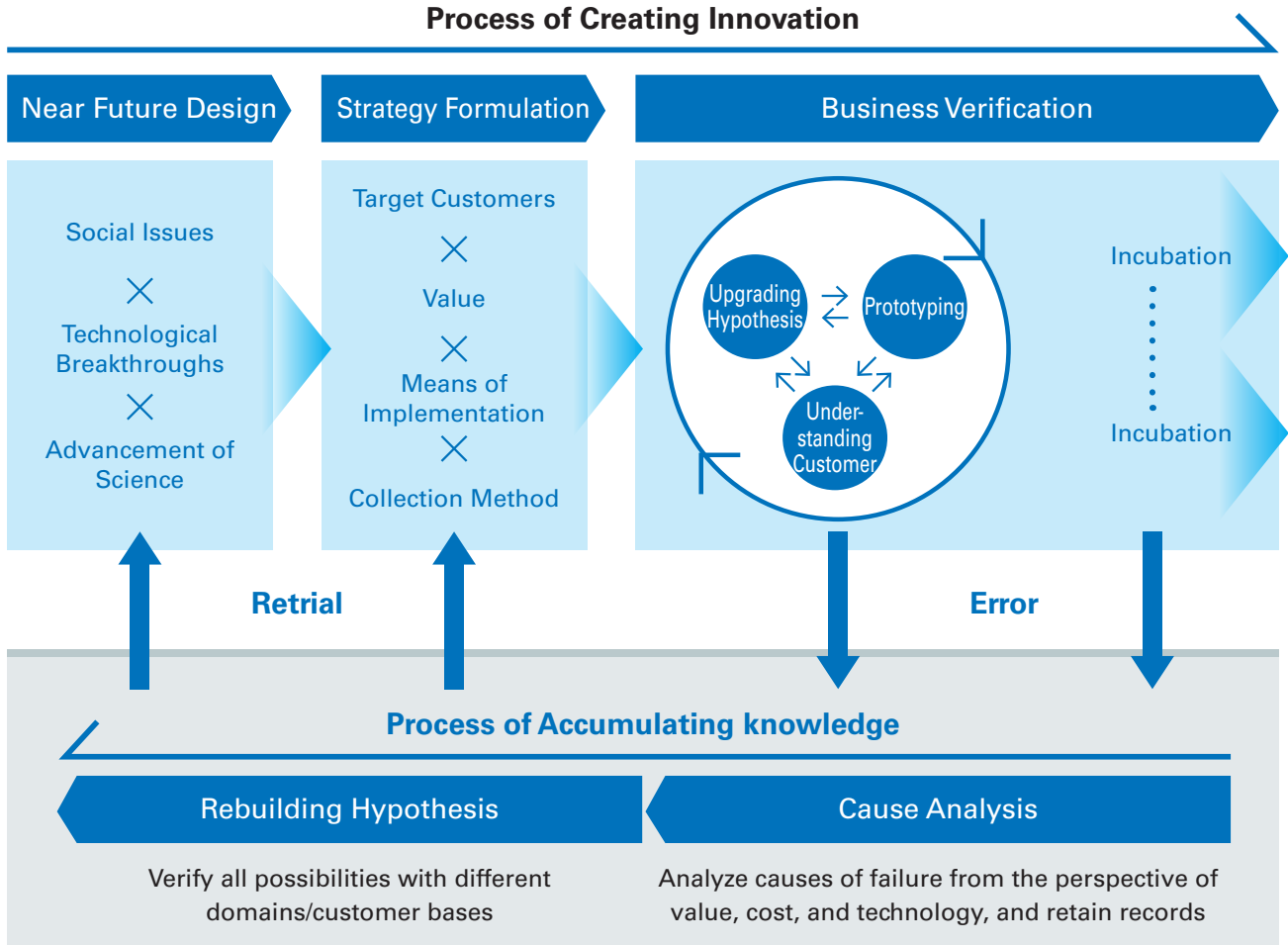
— Can you tell us about any specific initiatives for accelerating innovation driven by social needs?

As our corporate innovation platform, the Innovation Exploring Initiative HQ (IXI) is responsible for backcasting the social needs process for near-future design, strategy formulation, and business verification IXI is home to many experts from both inside and outside our organization. We established OMRON SINIC X Corporation (OSX) as a separate company under the umbrella of IXI to develop near-future design. OSX has brought in many top talents from outside in the fields of AI, IoT, robotics, and other leading-edge technologies. This company makes the best use of its talented staff, while working with research groups inside and outside OMRON, engaging in open innovation and performing near-future design. To maximize the effectiveness of these activities, OSX provides unique human

personnel hiring and evaluation systems, including allowing side businesses and moonlighting, that could only work practically under the structure of a separate company. I think the freedom with which OSX researchers work will be a model of work-style reform.

Another important role of IXI is to be the storehouse of knowledge for OMRON in order to speed innovation driven by social needs. To create new value, we must double and triple our attempts. I'm sure we will see our share of failures. Each failure is one more point of learning we can accumulate to ensure future success. Our performance evaluations stress process even more than results, encouraging employees to try and try again without fear of setbacks.

■ Process of Creating Innovation by Social Needs





OMRON SINIC X Corporation, home to top researchers in AI, IoT, robotics, and other leading-edge technologies.

(Photo, from left) Technology Advisor Yoshitaka Ushiku (concurrently working at the University of Tokyo), Technology Consultant Satoshi Kurihara (concurrently working at UEC and Keio University), Researcher Felix von Drigalski (Ph.D., Nara Institute of Science and Technology), and Researcher Atsushi Hashimoto (formerly of Kyoto University)

— Last question. What do you think is most important for innovation driven by social needs?

Managing our processes effectively and fostering our people.

We have mechanisms and organizations in place. In the future, we need to carefully study whether these frameworks are working effectively. One job of the IXI is to make sure information within divisions is identified and shared across our entire group. At the same time, IXI is responsible for communicating information to entities outside the company on a timely basis. Active internal and external communications in this way will help our mechanisms function effectively.

Our people, however, are the most important factor. We have charged IXI with a responsibility for providing a space to develop our strategic personnel. Strategic personnel are those people who will carry OMRON forward, displaying the architecture skills, communications skills, and

follow-through necessary to lead our business. When we want to launch a new project, we put the idea together with strategic personnel from the business division in question under the offices of the IXI, after which a team is formed consisting of people from different backgrounds. After participating in and gaining experience in several projects, these strategic personnel return to their divisions providing even greater contribution. In this way, we make full use of our strategic personnel in mechanisms and organizations, producing innovation after innovation for social needs. This process makes sure innovation at OMRON does not rely on a single person of genius. Rather, innovation for social needs at OMRON is driven organizationally.

You can expect more innovation driven by social needs from OMRON in the future.