Key Themes for Co-Creation of Value

— Innovation —

Research and Development (R&D)

R&D activities at Yokogawa are classified into two types. Firstly, product development and advanced research activities are geared to meeting customer needs and target a relatively foreseeable future. Secondly, innovation activities are conducted from a longer-term perspective, involve greater uncertainty, and are directed toward the identification and generation of new business opportunities. Whereas business headquarters are mainly responsible for the former, the latter is primarily the task of the Innovation Center.

The mission of the Innovation Center is twofold:
1. Research and develop new technologies that complement those of each business headquarters and address customer issues, leading to expansion of the business scope.
2. Prepare for an uncertain and unpredictable future and open a path to the creation of new businesses by working with customers to uncover latent issues and find ways of addressing them.

R&D structure at Yokogawa

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Present | Future

Innovation Activities

By engaging in innovation activities, Yokogawa not only provides systems but also creates technologies and solutions together with customers that prompt them to change their perspectives and approaches. The innovation process consists of three concentric layers as shown in the figure below. The outermost layer, consisting of information from the field and signs of change obtained by scanning the external environment, such as markets and customers, is reflected in standardization, intellectual property and open innovation, which constitute the second layer that supports innovation activities, the innermost layer. In innovation activities, we generate ideas, refine them through R&D and incubate them. Repeated execution of these three stages leads to commercialization.

1. Ideation stage
We acquire insights into the future through the use of methodologies such as scenario planning and scanning. Based on scenarios that assume shortages of food, energy, and water will occur in the near future, the Innovation Center has elected to focus on biology, energy, and materials, and is coming up with ideas for activities that can be carried out in these fields.

2. R&D stage
We identify and then refine promising research themes from the various possibilities that emerge at the ideation stage. At this stage, researchers whose duties normally focus on the R&D of new technologies also examine the feasibility of the identified research themes, analyze markets, and, if necessary, engage in cultivation of markets.

3. Incubation stage
When an R&D project reaches an advanced stage and the goal comes into sight, the incubation stage starts. At the incubation stage, researchers develop a strategy with support from sales and marketing operations for commercialization. Then, a demonstration is conducted in collaboration with the customer to ascertain whether the developed solution offers value. If it does, the project proceeds to the commercialization stage.
Introduction of Innovation Activities for Commercialization

Case | Sensing Technology

Yokogawa is developing a high-sensitivity, high-speed molecular spectroscopy technology capable of detecting small changes in condition caused by molecular interactions, with the aim of realizing indicators and their numerical expressions that offer new value to our customers in fields such as medicine, food production, and life science. For example, the absorption (effectiveness) of lycopene contained in tomatoes depends on how well it blends with oil at the molecular level. It is essential that a sensing technology is capable of not only identifying components and their respective content levels but also objectively demonstrating the interactions between substances (molecules) that generate functions and benefits.

Yokogawa’s technology brings together the high-sensitivity, high-speed, and non-destructive characteristics of measurement instruments and is expected to contribute to many industries with potential for growth. Applications include minimally invasive medical testing such as blood tests for cancer screening and DNA testing, as well as visualization of chemical reaction processes in peptide pharmaceuticals. The Company is challenging itself to develop a sensing technology with a measuring capability for non-physical quantities including functions and benefits, which have been difficult to express numerically until now.

Activities Supporting the Innovation Process

Intellectual Property

Yokogawa positions intellectual property as an essential asset for maintaining the high value of its products and solution services and providing value to all customers. Based on this, we have developed an intellectual property strategy in linked to our business strategies and R&D activities.

Yokogawa will acquire rights for and use intellectual properties created at the Company in accordance with the above-mentioned intellectual property strategy. In the context of these activities, Yokogawa positions intellectual property rights not only as legal rights but also as marketable assets. The Company will continue to provide unique and unrivaled products and solution services.

Open Innovation

Yokogawa is vigorously promoting open innovation, the use of external seeds and resources (e.g., advanced technologies, know-how, human resources), and collaboration with other parties for innovation. Instead of relying solely on our own technologies, we are working to deliver superior value to our customers by forming strategic relationships and collaborating with partners all over the world, including universities, research institutes, and start-ups.

Standardization

International standards have an important bearing on our business strategy since they have an impact on whether a product or solution service will be able to establish dominance at the global level. International standards are also an important part of the research and development strategy since they determine whether the technology in which the Company has made prior investment will find support in the market.

Yokogawa actively engages in international standardization activities as members of many international standardization organizations such as IEC and ISO in a broad range of fields while linking its activities with the Company’s R&D and intellectual property strategies. Due to their inherent nature, however, international standards may conflict with intellectual property and lead to patent disputes. Yokogawa puts priority on enhancing value for its customers and focuses on international standards that set forth requirements on interoperability in telecommunication technologies and software. The Company’s policy is to disclose its intellectual property if needed or issue a license through a licensing agreement.