

Collaboration Opportunity Creation

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1. THE UNIVERSITY OF TOKYO: OPENING OF THE SOCIAL COOPERATION PROGRAM

In February 2018, Furukawa Electric and the University of Tokyo, opened the Social Cooperation program “Creation of the Next-Generation Signal and Power Transfer Technologies” at the University of Tokyo Graduate School of Engineering with the aim of creating new business and of improving productivity with the new ideas by integrating the new material technologies and the production technologies of the Group with the academic expertise of the University of Tokyo (Figure 1). The program will run for three years until the end of January 2021.

The Research & Development Div. has been conducting necessary studies in industry- academia collaborations to obtain higher results sooner for the purpose of profit creation by launching products in a timely manner responding to the rapidly and dramatically changing external environment such as the market.

The Social Cooperation program is a comprehensive collaborative research framework designed to solve social (corporate) issues based on the corporate investment. In this scheme, diverse and innovative technologies to solve the issues are developed by integrating the unique technologies and know-hows owned by the company with the advanced technologies and the broad range of discernment by the University of Tokyo.



Figure 1 The Social Cooperation Program Greetings at the Opening. (February 8, 2018)
The University of Tokyo, President Gonokami (left)
Furukawa Electric President Kobayashi (right)

Unlike a joint research conducted with a specific laboratory, the program has an advantage that the optimum human resources can be flexibly and systematically assigned depending not only on the content of the theme but also in response to the development phase and to newly emerging technical issues. Currently, a total of four themes are being offered in this program, two themes for new materials such as carbon nanotube electric wires and the thermoelectric conversion element, and two themes for development of production technologies using IoT, AI and Robotics as keywords.

As a result of the efforts to date, in the new material themes, it has led to clarification of issues to be solved by the deeper elucidation of the principle, and in the production technologies themes, it has greatly contributed to the progress of the technological development for labor-saving applicable to labor-intensive factories that exist many in the Group.

In addition, by actively assigning young human resources as develop members, we are planning to develop professional human resources not only by getting them into touching with the advanced academic knowledge of the University of Tokyo but also by getting them into learning the development processes and into establishing personal relations.

For now, further joint research themes are being considered, and R&D in a wide area will be promoted by strengthening the cooperation with the University of Tokyo.

2. Fun Lab

In August 2016, an open laboratory named Fun Lab was newly established in Yokohama Works as a venue to create new values by informing our capability of technological development, and by exchanging and discussing with external parties. By utilizing this facility, Furukawa Electric will further strengthen the open innovation through collaborations with customers and other companies, universities, public research institutions and others¹⁾.

The concept²⁾ of Fun Lab consists of “The laboratory that expands the possibility of technologies through communication with people outside the company” and “[The venue] for knowing each other”. In particular, “[The venue] for knowing each other” is strongly intended to be a place

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for open innovation with visitors by designing a space that enables creative communication under the three keywords shown below that have the meaning of “Co-” in Japanese.

- “COMPREHENSION” Recognize each other’s strength.
- “COOPERATION” Propose and share new senses of values utilizing each other’s strength.
- “COLLABORATION³⁾” The place to jointly expands and realizes the shared senses of values.

Based on this concept, regarding the technologies and the exhibited objects on display, the technologies and roadmaps being researched and developed in our laboratories are also being exhibited. Based on the intention of visually expressing the “Function = Customer value” realized by the technology, products are in principle not displayed (however, the products may be displayed to present functions realized by the technology). And we do not aim for products sales.

Figure 2 shows the Fun Lab logo and the QR code on the dedicated website. We would welcome your visit and would like to discuss with you about the possibility of collaboration.



Figure 2 Fun Lab logo (left) and the QR code on the dedicated website (right).

The utilization result as of the end of September 2019, for about three years from the establishment, are as follows.

- (1) Actual numbers of visitors (from August 2016).
Accumulated total: 480 teams, of which 381 teams are externals. (Figure 3)
Total of 1,590 visitors.

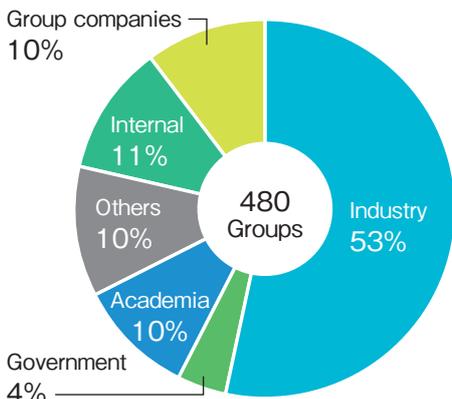


Figure 3 Breakdown of Fun Lab visitors in 3 years since establishment.

- (2) Wide range of visitors from industry, government and academia.
I.e. experience learning of junior high school students, contribution to local education, etc.
- (3) Internal / Group companies: 99 teams
Strengthening cooperation between internal / Group companies.
- (4) “Collaboration” theme: 15 or more.

In response to the large numbers of visitors and to accelerate open innovation activities, Fun Lab was newly renovated in June 2019⁴⁾ (Figure 4).

By doubling the floor space, the sensory samples and videos were added to the exhibited objects and the meeting space were enhanced, and the facility it was reborn to be more attractive.

The renovated Fun Lab is a space equipped with devices that induce idea, such as whiteboards to quickly write down ideas that visitors think up, a mechanism that allows visitors to make presentation casually. Thus, communication can be born and deepened spontaneously through these various devices. In addition, the exhibited technologies focused on Furukawa Electric’s core technologies in “metals”, “polymers”, “photonics” and “high frequency”, are displayed with ingenuity in a manner that visitors are able to have better understanding how these technologies are useful for social infrastructure construction.

In particular, the exhibition stand at the center is designed so that topics are displayed depending on guests. For example, as shown in Figure 5, on the occasion of the Group technology exchanging meeting where Furukawa Electric Group companies gather, an illustration of the city was posted and it was used to a visitors’ participation type of workshop in the manner that the visitors to write in their ideas that would have be nice to have similar thing in the city. Another example is to use this exhibition stand as the place for the dynamic demonstration of newly launched products.

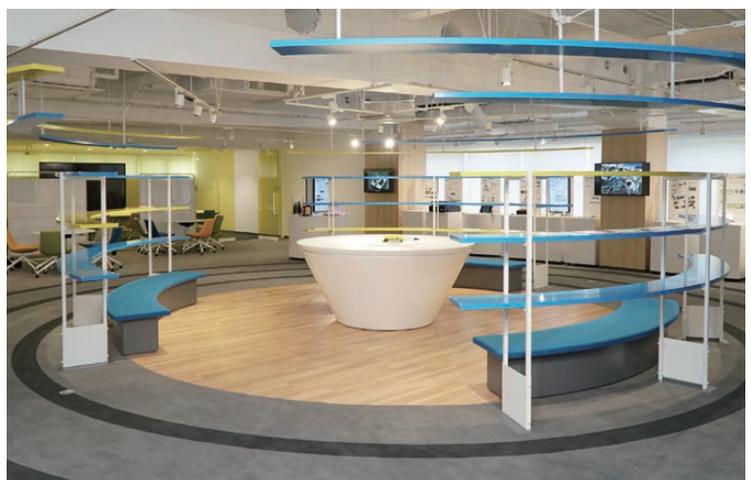


Figure 4 Inside the newly renovated Fun Lab.



Figure 5 Usage examples of the exhibition table at the center of Fun Lab. (Left) Furukawa Electric Group technology exchanging meeting. (Right) Dynamic demonstration of the newly launched products.

3. PARTICIPATION IN THE YOKOHAMA INNOVATORS COMMUNITY

As described in the press release by Yokohama City (December 21, 2018)⁵⁾, in recent years, corporate R&D bases have been opening one after another in Yokohama City and many venture companies have been located in Kannai area and other areas. Yokohama is a land that has been producing many innovators who have been creating new businesses for 160 years. Yokohama has a plan, for the modern innovation, to create the “Yokohama Innovators Community” as a daily place where corporate employees, entrepreneurs and students can learn and interplay. Furukawa Electric has agreed with the intent and decided to participate in this plan⁶⁾.

At New Year Yokohama Innovator festival in Kannai (Figure 6), held at the Yokohama Media Business Center on January 7, 2019 sponsored by Yokohama City, Mayor of Yokohama City Fumiko Hayashi made a declaration statement of “Innovation City Yokohama” and called for further participation to this program.



Figure 6 New Year Yokohama Innovator festival in Kannai⁷⁾.

According to a press release from Yokohama City, as of January 4, 2019, it was announced that 43 organizations, including universities and companies have participated in

the Yokohama Innovators Community.

More specifically, a base to support growth will be set up in Kannai area by gathering venture companies and entrepreneurs from Japan and abroad who will lead innovation and economic growth. And, with support from such as the “Venture business supporters from Japan and abroad and domestic companies/ managers”, creation of new business from Yokohama will be promoted and attract companies and investment from inside and outside the City then lead to the employment creation and further development of the business area. In addition, Yokohama City aims to be a business area that creates next-generation industries addressing new social issues such as the SDGs, by taking the advantage of the strength of the gathering of the “innovators” such as entrepreneurs, researchers and students in the City and by promoting the exchange of the human resources between corporation and the private companies⁷⁾. It has been announced that the project will be implemented in corporation with the “SDGs DESIGN CENTER” in Climate Change Policy Headquarters that is the crosscutting project of Yokohama City.

As shown in Figure 7⁷⁾, presently, companies such as Murata Manufacturing Co., Ltd. and KYOCERA Corporation have established or are planning to establish R&D bases in Minato Mirai district.

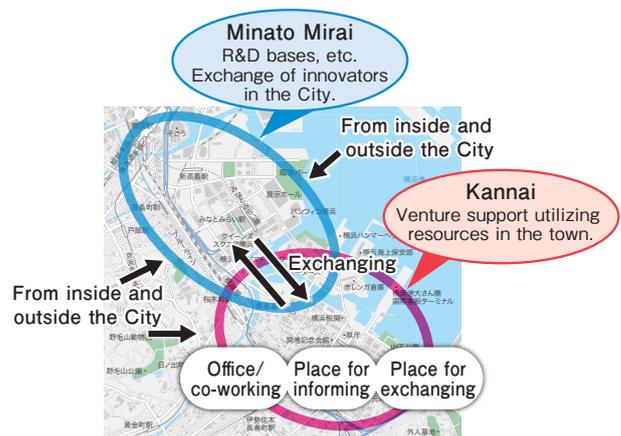


Figure 7 A part of the plan “Innovation City Yokohama”.

By participating in this community, Furukawa Electric is planning to participate in “Innovators Meeting” where passionate innovators, beyond the industry and business type, gather and share the ideal imagination of initiatives in Yokohama, also to participate in initiatives for innovations to solve social issues in SDGs, in cooperation with the SDGs DESIGN CENTER in Yokohama City.

As a part of this activity, the “Innovation Space Study Group” with an innovation center was set up, hosted by Professor Seiji Manabe of Yokohama National University of Business administration Department. About 10 companies from different industries gather to discuss topics such as innovation issues out of the Innovation Center. The second meeting was held in the Fun Lab of Furukawa Electric. Opinions for the innovation issues and others were exchanged through such as the group work, and more vitalized innovation activities are aimed by sharing successful examples and failure examples of each company.

REFERENCES

- 1) Furukawa Electric HP > News Release > Furukawa Electric to Newly Construct an Open Lab in Yokohama (Referred on Jan. 22, 2020) https://www.furukawa.co.jp/en/release/2016/kenkai_160817.html
- 2) K.Sato, T.Ijichi: “Reorganization of R&D system and how to structure a laboratory to create innovation, 5-2 New business creation by collaboration in Fun Lab”, Technical Information Institute Co., Ltd, 2017. (in Japanese)
- 3) T.Sasaki: “Hypothesis existed in the beginning, The world of “Engineer spirit” open up tomorrow.”, CREST, 1995. (in Japanese)
- 4) Furukawa Electric HP > News Release > Open Lab “Fun Lab” renewal open (Referred on Jan. 22, 2020) https://www.furukawa.co.jp/release/2019/kenkai_190704.html (in Japanese)
- 5) City of Yokohama HP > City Administration Information > Public Relations > Press Release > Economic Affairs Bureau > Press Release FY 2018 > Mayor Fumiko Hayashi made a declaration statement of “Innovation City Yokohama” (Referred on Jan. 22, 2020) <https://www.city.yokohama.lg.jp/city-info/koho-kocho/press/keizai/2018/20181221-024-28760.html> (in Japanese)
- 6) Furukawa Electric HP > News Release > Participation in “Innovators Community” hosted by City of Yokohama (Referred on Jan. 22, 2020) https://www.furukawa.co.jp/release/2019/kenkai_190125.html (in Japanese)
- 7) City of Yokohama HP > City Administration Information > Organization > Introduction of Economic Affairs Bureau > Budget of Economic Affairs Bureau > Budget overview of Economic Affairs Bureau, FY 2019 (Referred on Jan. 22, 2020) https://www.city.yokohama.lg.jp/city-info/yokohamashi/org/keizai/yosan/31yosan.files/0001_20190318.pdf (in Japanese)