

Co-creation of New Business Ideas with Our Customers

The IHI Group's new hub for innovation promotion

The IHI Group encourages innovation working alongside with customers. The Ignition Base (commonly called as “i-Base”), which opened in May 2019, aims to swiftly provide new value for social and customer issues by considering society together with customers using newly adopted design thinking. We propose new value for an appealing future by envisioning the desirable state of society through art thinking. Here, we introduce our innovation activities at i-Base toward co-creation with customers.



Introduction

We are now faced with a global situation that calls for the creation of new value in response to drastic changes in our social environment, such as the COVID-19 (coronavirus disease 2019) pandemic, and natural disasters triggered by climate change due to global warming. The IHI Group has opened the Ignition Base (commonly called as i-Base) in May 2019 as a new hub for innovation development. We utilize i-Base as an ignition point to conduct innovation activities with the following newly adopted methods: design thinking that helps resolve issues from a user point-of-view; and art thinking that helps give birth to new value based on the vision obtained by uncovering issues with a broad view of society. We aim to co-create an appealing future and new value for social and customer issues by focusing on society together with customers.

In this article, we will introduce the innovation activities at i-Base, the new innovation hub of the IHI Group.

Innovation initiatives of the IHI Group

The IHI Group promotes innovation activities at four hubs in Asia, including Japan, and the United States.

The IHI Launch Pad, which opened in America's Silicon Valley in December 2018, collaborates with local start-up

companies for innovation activities that respond to the issues of local customers. Technology developed at the IHI Launch Pad, such as advanced robot technology, is being utilized in Japan as well. Singapore's IHI ASIA PACIFIC PTE. LTD. (IHI-AP) collects local needs and seeds as an Asian hub, working to commercialize new ideas through social demonstration.

In Japan, the IHI Tsunagu Lab, which opened in 2014, has functioned as a hub for co-creation with customers. There have been many business ideas inspired through interaction with customers at the IHI Tsunagu Lab. In order to swiftly respond to environmental changes in society and around customers, and to speedily give birth to new value, we believe that we need space and time to solidify solutions via thorough discussions with customers. That is why we opened i-Base in addition to the IHI Tsunagu Lab, which is more geared toward interaction. The relationship between the innovation activities of the IHI Tsunagu Lab and i-Base can be seen in the image on the next page. At first, we hear issues and requests of customers at the IHI Tsunagu Lab. If the issues and requests can immediately be resolved by the technology of the IHI Group, they are relayed to business divisions for deliberations toward practical application. In most cases, resolving customer issues requires to working with customers on a detailed analysis of the issue, generation



of ideas for solutions, and repeated prototyping and testing to refine ideas. We regard i-Base as a place to conduct practical activities for these innovation processes alongside with customers. For projects at i-Base, optimal project members are assigned from various divisions, such as development and business divisions, according to the customer issue in question.

Furthermore, activities with design and art thinking are incorporated into our innovation process thanks to the cooperation from external sources as well. We aim to swiftly create solutions for customer issues with design thinking and propose attractive value with art thinking.

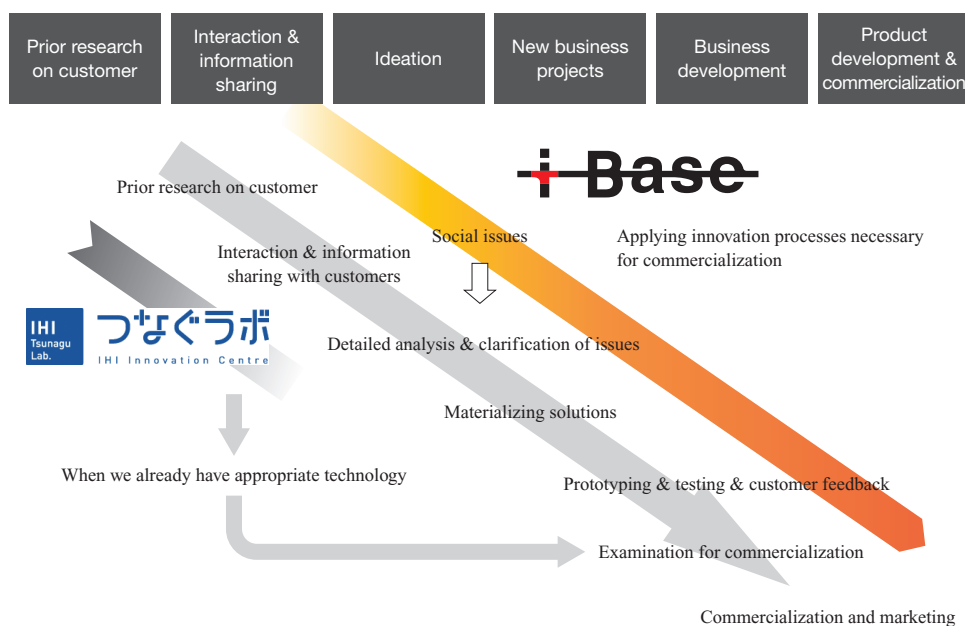
For co-creation with customers

We had a strong need to change our mindset and processes for development, in order to provide new solutions in a short period of time for social and customer issues. That is why we have been exploring development styles optimal for the IHI Group by combining design thinking at the core with other innovation processes such as lean start-up, OODA loop, and art thinking.

The design thinking is a method in which one defines issues to be resolved through empathizing with customers, creates ideas for solutions, and then improves the ideas by repeatedly prototyping and testing to incorporate customer opinions. Because of a harmony between this method and the orientation of i-Base toward co-creation with customers, our innovation activities are conducted based on this method. Although there are several different variations of this method, we think of the five processes of “Empathize”, “Define”, “Ideate”, “Prototype”, and “Test”, advocated by America’s IDEO, as our innovation processes and apply them in actual activities.

In addition, in order to attain a deeper knowledge of society and customers, we especially focus on “Empathize” initiatives. The “Empathize” process is crucial in changing our style from conventional product-oriented one to market-oriented one because the process helps us realize social changes and customers’ thought by finding issues from a customers’ point-of-view. We are exploring effective ways of conducting interviews that unearth customers’ unexpressed thought and of identifying on-site issues in society and of customers by actively incorporating external wisdom as well. Also, innovation within B to B projects is necessary in many cases at the IHI Group. We have also incorporated job mapping, a method for analyzing customers’ business processes to explore essentially critical issues, for the purpose of discovering issues even customers are not aware of and providing solutions by imagining users of the customers’ products or services.

Furthermore, we are attempting to change our mindset towards the “Prototype” stage in order to provide solution much more speedily. Up to this point, prototypes were made as a final technical testing step after concrete ideas for solution were established. In this conventional way, there is a risk of wasting customers’ precious time when the solution does not match what the customers had in mind. That is why we have decided to introduce a cycle of prototyping and testing from design thinking, in which prototypes are made at the stage where ideas are being narrowed down and the ideas are tested from a customer perspective. This cycle of prototyping and testing is simultaneously conducted for “business model testing” and “technical testing” to boost the business level and technical level of solutions at the same time and speed up the processes from idea creation to testing for commercialization.



Working with customers — our innovation process in cooperation with i-Base and Tsunagu Lab

Functions and initiatives of i-Base

We will introduce the floor layout and functions of the i-Base, our innovation hub to create new value along with customers. The image below is the floor map of i-Base. It is located on the second floor of our new laboratory building named the IHI Group Yokohama Labs, opened in May 2019. Situated from the top left of the image in the same order as the process of design thinking are the co-creation area, the prototyping area (GARAGE), and project booths across the Plaza at the center, in which special events can be held.

Co-creation area of i-Base

Customers are welcomed at the Presentation Dock in the co-creation area, for in-depth discussions on the customers' and society's issues. The Presentation Dock features two large monitors with an entire whiteboard wall behind them, making it easier to hold discussions with customers by presenting issues and ideas for solutions and sharing the images.

In the co-creation area features exhibitions of our trial productions, created with design thinking. Here, customers experience design thinking development processes, in which empathy with customers helps us create ideas and refine the ideas through repeated prototyping and testing, so that we further discuss new ideas and ways of development with customers.

GARAGE of i-Base

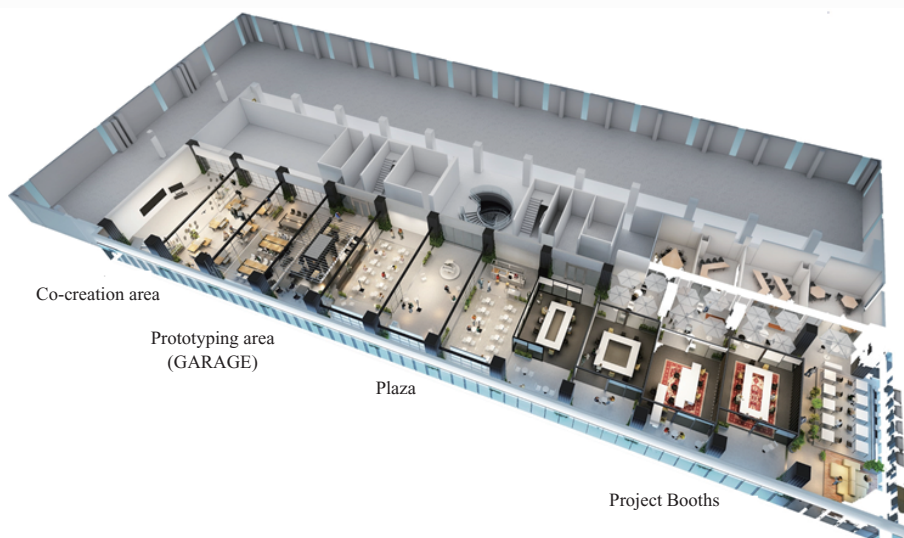
Adjacent to the co-creation area is a prototyping area called the GARAGE. The main role of the GARAGE is to ease mutual sharing of more concrete images by materializing the solutions drawn out with customers in the co-creation area. In the GARAGE, we not only generate three-dimensional



Presentation Dock, where primary discussions are held with customers



Co-creation area with exhibitions of design thinking pieces



Schematic layout of i-Base



prototypes with 3D printers but also utilize digital technology including 3D-CAD and numerical simulations to share embodied solutions with customers.

Solutions that meet the customers' demands are created in short periods of time here, by repeatedly generating prototypes in sight of the customers.

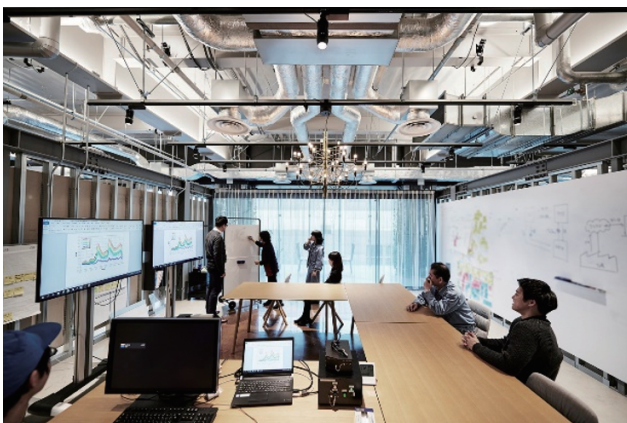
Plaza of i-Base

There is a multi-use open space called the Plaza in the center of the i-Base facility. Here, lectures and events for opinion exchange are held on design and art thinking and social issues by inviting outside lecturers. Furthermore, the space is available even for events held by external users, acting as a space of cross-field interaction. We hope that in the future, this will become a space in which diverse information on innovation comes together and interaction with people from various fields will help us spontaneously give birth to new ideas.

Project Booths of i-Base

The largest characteristic of i-Base is the Project Booths, where projects can be developed with people outside of the company. There are four Project Booths which are exclusively allocated for a designated period of time to project teams working on new businesses. Members of project teams are assigned from various divisions including sales and design because the booths are intended not only for technology development but also business development. Furthermore, project teams also include supply chains, consulting firms and customers according to the needs. These booths allow members including those from outside the company to gather in one place and focus on the project at hand.

The concept of i-Base is advancing development while incorporating wisdom from outside the company, so the GARAGE and Project Booths are open spaces in which we can have discussions with people from outside the company or different fields at any time.



The Project Booths for teams to focus on commercialization in one place

Achievements and Future Plans

Ever since the facility opened in May 2019, some projects have already progressed to the point of business collaboration on the details. For example, the project working on reduction of CO₂ emissions is highly evaluated and expected to be advanced from the customers. We believe that these achievements are the results of collaboration with customers for incorporating their opinions at once throughout the processes, from brainstorming ideas, prototyping and testing to deliberating on commercialization.

Responding to the COVID-19 pandemic, we are now developing a small device for eliminating viruses with ozone. From the early stage of the development, we precisely show our ideas and concepts to the customers and incorporate their feedbacks. We aim to develop the device which materializes what the customers picture in their mind in a short period of time by applying design thinking.

In addition to the pandemic, the reduction of CO₂ emissions is also an important global issue. Toward solving the issue, we are promoting wide-ranging research into the latest technology and social demands relating to the reduction of CO₂ emissions with the active use of the IHI Launch Pad in the United States. Based on the analysis of the information acquired in the research, we discuss what technology the IHI Group should develop.

Through profound technical discussions with customers, the IHI Group will continue to focus on social and customer issues, create new value with customers, and establish a new society that is pleasant for citizens in the 22nd century by fully applying the features of i-Base, IHI Tsunagu Lab, IHI Launch Pad, and IHI-AP.

We are grateful for all the help from others for i-Base innovation activities, and especially grateful to the Tohoku University of Art & Design, NIKKEN ACTIVITY DESIGN lab of NIKKEN SEKKEI LTD, Design Strategist Ken Tsukajima, and Artist Zai Nomura for their cooperation from the initial floor design to the current activities. We would like to express our gratitude once more to many manufacturers that allowed us to view their innovation spaces when we were still working on the concept of i-Base.

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