

# Building Our “Digital Lab” – a Base of Agile Approach and Collaborative Innovations

Yoshiaki Inaba,  
Hironobu Fukai

Keywords Agile, Scrum, Value creation

## Abstract

Recently, the environment surrounding the world has been undergoing major changes, such as the impact of climate change, which has accelerated since the Industrial Revolution, the digitalization due to technological innovations, and the diversification of people’s values and lifestyles. In the midst of such social changes, we have set a vision called “Sustainability Partners” and aim to be a company that can contribute to creating a new society by embodying this vision. This cannot be achieved by a single company, but requires a new approach centered on expanding connections beyond the boundaries of industries and companies (various partners) and creating new business value. Toward this “creation of new business value”, we have been working on introducing an agile development process since fiscal 2020.

This time, we have opened “Digital Lab” at Meiden Numazu Works in Numazu City, Shizuoka Prefecture, Japan. This place can be used as a base of collaborative innovations with external partners. Under this lab, we promote this new agile approach, in which the effectiveness has been confirmed.

## 1 Preface

Up until now, we have focused on projects with clear and fixed specifications, centering on the waterfall development process. This approach makes it easy to manage work progress and costs, and is suitable for completing large projects as planned with a certain level of quality. While this approach is still effective, there are increasing cases where the goal of a project is unclear and changeable for its prerequisites.

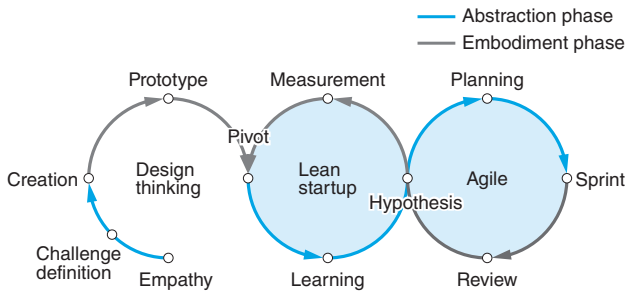
As society changes dramatically, we are also promoting sustainability management and expanding the roles we must play. Companies are now being asked to contribute to solving social issues through new approaches centered on business value creation, rather than simply providing products and services.

We have begun the challenge of developing an agile development process that allows exploration and adaptation as a new development method that can respond to these environmental changes. In this paper, we introduce the newly opened “Digital Lab”, a base for agile approach and collaborative innovations, in order to accelerate this initiative.

## 2 Agile

The word agile is an adjective meaning “nimble” or “clever”, and describes the nature or state of something. In software development, one of the most common applications of agile, it generally refers to the concept of highly agile software development.

The origin of this is the four values outlined in the “Agile Software Development Manifesto”<sup>(1)</sup>, compiled in 2001, and one of the methods for putting this into practice is “Scrum”<sup>(2)</sup>, which is currently mainstream in the world. Our company uses Scrum as a development method for practicing agile, but it is not just a concept of software development. We combine different concepts, “design thinking”<sup>(3)</sup>, which finds problems and seeks solutions, and “lean startup”<sup>(4)</sup>, which builds and evaluates minimum viable solutions. We practice it as an agile approach as shown in Fig. 1. The agile approach we practice is to run these iterative processes at high speed and aim to “create new business value” by repeating hypothesis and verification.



**Fig. 1 Implementation of Agile Approach**

In combination with different approaches such as lean startup design thinking and Agile (Scrum), the Agile approach is implemented.

### 3 Business Value Creation

Unlike the days when manufacturing itself had great value, the value of products and services themselves has declined relatively. The axis of value is the effect that can be obtained by solving essential problems, and continuous improvement – kaizen is required to maintain this value. Here, the subject of evaluation is shifting from the product or service itself to the best customer experience that contains effects and continuous improvement. The means to achieve this is the agile approach.

Agile aims to provide better products and solutions by deeply understanding true needs<sup>(3)</sup> and problems faced by customers and stakeholders through close communication. Furthermore, in order to continue improving this, it places importance on continuous dialogues and customer feedbacks. For this reason, agile can also be said to be an approach based on collaborative innovations.

In this way, agile is not just a development process, but can aim to create continuous business value by fundamentally changing traditional ways of working, including value structures and mindsets.

### 4 Digital Lab

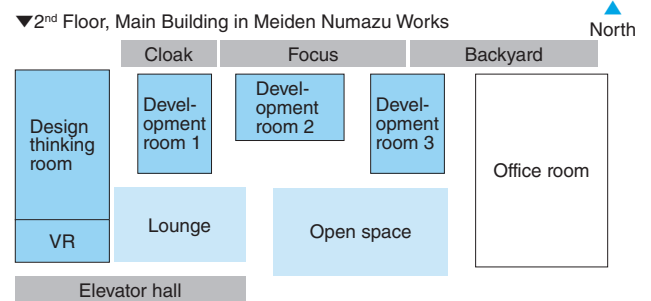
To practice a fundamentally different way of working, a suitable “place” is required. All the facilities and rules in our company were optimized for the traditional approach, so a new environment was needed to promote agile approach.

We established the Digital Lab at Meiden Numazu Works as a base for agile approach and collaborative innovations, and started the operation. Although it is inside the in-house location, we have eliminated the “traditional Meiden way approach” as



**Fig. 2 Exterior of Digital Lab**

An Exterior of the Digital Lab is shown.



**Fig. 3 Floor Layout of Digital Lab**

The Digital Lab is composed of five areas (development room, design thinking room, open space, lounge, and focus).

much as possible and are careful to encourage a mind shift to new initiatives. Fig. 2 shows the exterior of the Digital Lab.

Fig. 3 shows the floor layout of the Digital Lab. It consists of five areas with different roles. The three development rooms are the core of the Digital Lab. These three rooms boast the largest area. Our scrum teams are working on to find and create the solutions. By quickly creating working prototypes, the teams are to collect real-world feedback from stakeholders. Fig. 4 shows the development room.

The design thinking room makes use of large windows to create an open space. We position design thinking as a basic skill necessary for all employees, and recently have begun training all new recruits there. We are also encouraging existing business units that have not practiced agile approach to learn more about it. Fig. 5 shows how the design thinking room is used.



**Fig. 4 A View of Development Room**

This room is equipped with standard furniture necessary for scrum activities. Each compartment is fitted with a glass wall through which the room inside can be seen. In consideration of secrecy, however, designed glass films are used to control the transparency.



**Fig. 6 How Open Space is Used**

The open space is equipped with a large projector and sound equipment. This space is flexibly utilized for many purposes: variety of events, seminars, and collaborative innovations with in-house and external stakeholders.



**Fig. 5 How Design Thinking Room is Used**

The room is equipped with dedicated office furniture as standard. This room is specialized for design thinking.



**Fig. 7 How Lounge is Used**

It is a space where relaxed small group activities and spontaneous conversations can take place.

The Digital Lab also has an open space with a flexible layout that can be used for various events. **Fig. 6** shows how the open space is used. In addition, we have prepared spaces that accommodate new ways of working, such as a lounge for spontaneous communication and a focus area for individual work. **Fig. 7** shows how the lounge is used.

## 5 How it is Used So Far

The Digital Lab will promote its use with a focus on agile approach, human resource development, collaborative innovations, and exploration. Agile aims to create business value through scrum.

Currently, three teams are regularly practicing scrum in the development room. In the open space, in-house seminars and study sessions will be held to support the development of digitally-savvy talents within our company. From October 2022 to March 2023, 16 such events have been held. The Digital Lab will be used for the “ICT Basics” technical education program for new recruits. This was launched in fiscal 2022. This education program centers on “business value creation”. The Information and Communication Technology (ICT) is positioned here as a tool. This aims to develop talents who can bridge between business and ICT.

In addition, since the opening in October 2022,

a total of 16 customers and stakeholders visited. They supported our activities, and some begun to hold ongoing exchange meetings. Although it will take time to produce results, we believe that we have taken the first step as a new place for collaborative innovations.

## 6 Postscript

We introduced the Digital Lab, a new base for collaborative innovations and agile approach aimed at “creating new business value”. As we promote sustainability management, the importance of agile approach that can create new business value is steadily increasing.

Going forward, we intend to continue to utilize the Digital Lab for collaborative innovations with internal and external stakeholders using an agile

approach. In doing so, we will provide products and services whose business values could solve social issues.

• All product and company names mentioned in this paper are the trademarks and/or service marks of their respective owners.

## 《References》

- (1) K. Beck et al: “Agile Software Development Declaration” 2001 <https://agilemanifesto.org/iso/ja/manifesto.html> (Retrieved on June 26, 2023)
- (2) “16th State of Agile Report”, Digital.ai, 2022 <https://info.digital.ai/rs/981-LQX-968/images/AR-SA-2022-16th-Annual-State-Of-Agile-Report.pdf> (Retrieved on 26 June 2023)
- (3) T. Brown: “Design thinking”, Harvard Business Review, Vol.86, pp.84-89, 2008
- (4) E. Ries: “The lean startup: How today’s entrepreneurs use continuous innovation to create radically successful businesses”, Crown Business, 2011