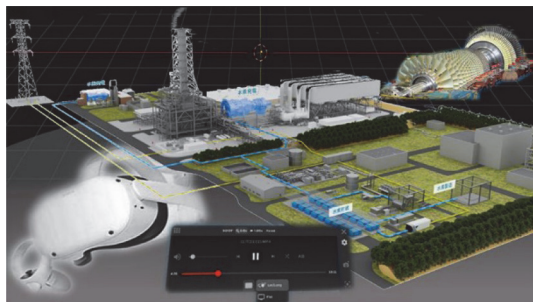


Deepening Stakeholder Communication by Utilizing Digital Technology under the New Normal Society



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Mitsubishi Heavy Industries, Ltd. (MHI) has restructured the way to communicate with our customers and other internal and external stakeholders under the leadership of our ICT Solution Headquarters, and has begun offering digital communication services appropriate for the new normal society. We have developed a virtual experience-type interaction tool "Factory Virtual Tour," which eliminates time and location constraints, fosters deeper mutual trust, and improves the customer experience. Furthermore, we have also established a studio dedicated to filming and distribution to transmit high-quality information to a large number of stakeholders, thereby increasing the opportunities to communicate with them. Our Energy Transition & Power Headquarters began using this tool and service antecedently in fiscal year 2021, and it has been well received from our many customers. This report presents representative examples thereof.

1. System overview

With the COVID-19 pandemic, which has been ongoing since early 2020, making it difficult to conduct factory tours and product introductions onsite, we have held real-time factory tours via a web conference system for customers and stakeholders whenever possible. However, operational issues have emerged, such as problems due to the influence of the communication environment, weather, or the like, difficulty in adjusting the holding time due to the time difference with overseas and factory access restrictions. We also received requests from our customers to undertake virtual factory tours. Therefore, we developed a tool that enables an on-demand virtual experience of the real thing so that our customers can experience our vibrant factories without being restricted by time or location.

This tool mainly consists of two functions and subsystems. Their outlines are as follows.

(i) Virtual experience-type interaction tool "Factory Virtual Tour"

Users can virtually tour facilities, factories, and equipment of our business site selected on a map using a web browser or virtual reality (VR) goggles to view street views and 360-degree videos (**Figure 1**). In addition, employees of each factory or business department can freely register and change the content according to the objectives and expectations of the customer who is going to visit.

(ii) Studio dedicated to filming and distribution

In order to maintain conventional direct communication with customers as much as possible, we have developed studio equipment and distribution systems that enable us to shoot videos for distribution and hold online events in real time. The dedicated equipment and distribution systems enable communication with domestic and overseas stakeholders with stable image and sound quality without time lag.

By combining on-demand factory tours and product introduction tools that take advantage of these strengths of virtual technology with real-time distribution and direct communication (explanations, commentaries, Q&A sessions, etc.), we have achieved deeper communication with customers than was possible before the COVID-19 pandemic.

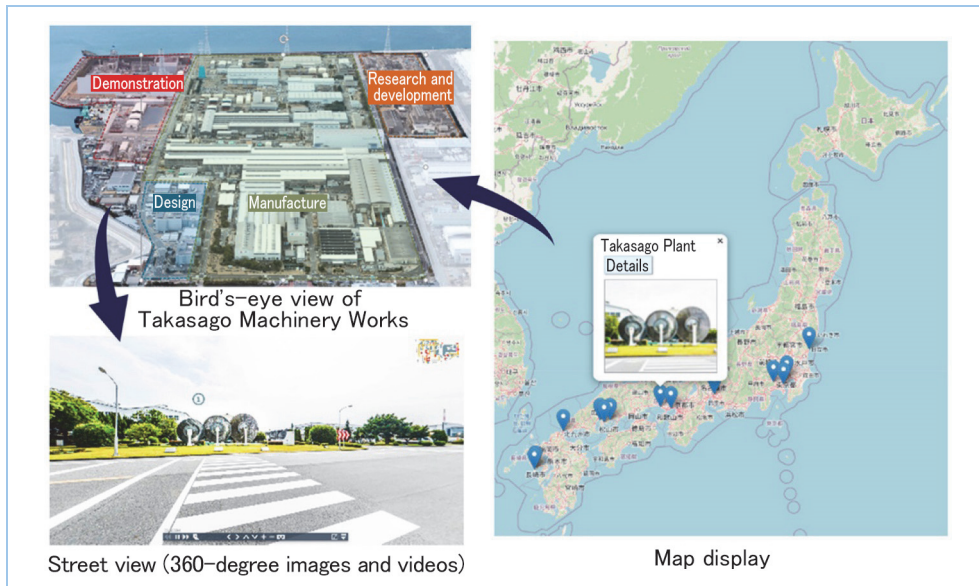


Figure 1 Overview of virtual experience-type interaction tool

2. Case examples

2.1 Example of use for event for foreign university

On August 19, 2021, a live virtual tour of our Takasago Plant and Nagasaki Plant was held for Institut Teknologi Bandung (ITB), Indonesia at the studio dedicated to filming and distribution using this tool. Our executives gave a detailed explanation of the facilities and equipment while operating street view and 360-degree video on this tool (Figure 2). Approximately 60 university faculty members from the ITB participated in this event. With realistic sensations delivered, as well as detailed responses to participants' requests for the contents and detailed explanations, we were able to provide a special feeling and the event was highly evaluated. This event later led to a joint research project between the university and us on clean energy solutions for decarbonization in Indonesia*.

*Press information on our website: <https://www.mhi.com/news/22020902.html>



Figure 2 A scene from online Factory Virtual Tour (studio dedicated to filming and distribution)

2.2 Example of use for recruiting activity

In March 2022, a virtual tour that augmented realistic sensations by linking this tool with VR goggles was conducted at the briefing for assignment fields held at the ICT Solution Headquarters. Participants wore VR goggles and experienced a walk-through tour of our Takasago Plant while operating a 360-degree video of the plant by themselves. Figure 3 shows the actual images seen on

the VR goggles. The same images were mirrored and projected on a screen set up at the venue so that other participants could also see the factory tour (**Figure 4**). It was made possible to provide the experience of visiting equipment and facilities that could not be introduced on the web in the past due to security restrictions, such as the gas turbine installed at the new assembly factory in Takasago Plant, which was able to give new impressions to the participants. The use of this tool has broadened access to information and created opportunities for participants to know more about our technologies and products and to empathize with them. In the post-briefing questionnaire, 27% of all participants, and 50% of participants at the Tokyo site chose the virtual tour as the most memorable program, which clarifies numerically that the program made a strong impression on them.

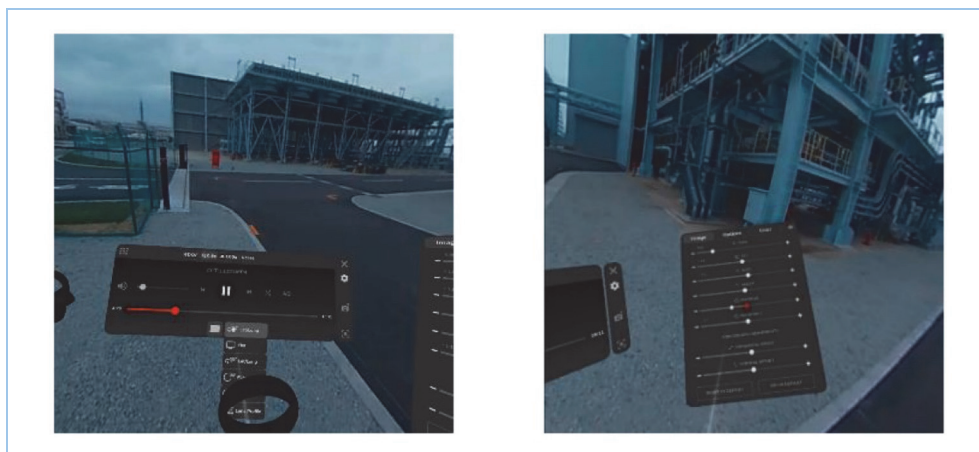


Figure 3 Images seen on VR goggles



Figure 4 Participants experiencing Factory Virtual Tour linked with VR goggles

2.3 Example of use for large-scale event for users

In September 2021, we set up a special studio at Takasago Plant, and used it as the main venue to hold a M701F gas turbine user conference (**Figure 5**), which was one of the largest customer events we have held. The number of participants, which was previously around 100, increased to 350 to 400 from a total of 39 plants in 22 countries around the world. This was a result of the strengths of location-independent online conferencing. In this 5-day conference, a combination of webinar format and two-way communication (real-time questionnaire and voting functions) enabled us to gather information from customers about their problems, needs, and level of interest and made it possible to share our new services and case studies, which quickly led to some business negotiations. **Table 1** summarizes the effects obtained by putting the event online. Additionally, by archiving and post-event distributing the videos, materials, questionnaires, etc., from the conference, it was made possible to provide information to customers who were not able to participate on the day, promote mutual follow-up, and collect the voice of customers further. Going forward, we are considering expanding the event to include virtual tours using VR/AR, etc.



Figure 5 Special studio set up at Takasago Plant

Table 1 Effects obtained by putting large-scale event online

	Face-to-face event	Online event
Number of participants	Approximately 100	Approximately 400
VOC, questionnaire	Gathered from each participant and takes several days	Aggregated from all participants and graphed in approximately 5 minutes
Popularity check and feedback for each session (presentation content)	Obtained by qualitative-observing and questioning the participants	Aggregated automatically and quantitatively in real time from site access information
Q&A	Handwritten each time	Online recorded immediately and automatically

3. Future prospect

In addition to the examples described above, this tool has begun to be used in meetings with various stakeholders, including relevant government agencies, institutional investors, and industry media, as well as in plant inspection tours, creating new opportunities to communicate with stakeholders. We plan to expand the use of this tool to include products, services, and technologies related to all our businesses. We will also consider the introduction of new technologies thereto and the diversion thereof to other applications, such as the use of metaverse and 360-degree cameras to augment realistic sensations, and their application to the execution of tasks such as education, training, trouble-shooting, and periodic inspections at factories and local sites.