Prototyping and Storyweaving

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Hitachi perceives social innovation as a pillar of business management. We place great emphasis on experience design aimed at enhancing customers' experiences. This design method is the key element for designing the process for creating customers' experiences. Among the extensive research development of experience design, a remarkable approach called "storyweaving" was developed by the design engineering firm, "takram design engineering." The ambition of this firm is to create a new approach to product creation by combining designing and engineering. Below is a discussion about the possibility of this new approach.

Amplifying between Paired Concepts

Ariyoshi: Recently, I feel that there is growing recognition of design research in many different fields of society. Also the concept of design thinking as an approach to innovation has become popular. My division is a design department of Hitachi, beginning with designing home appliances, where we have extended our capability to hardware, software, and designing services from products. Our involvement in projects that overlap the areas of design, art, science, and engineering has significantly increased. Under this kind of situation, let's discover the possibility of this new approach that is combining designing and engineering with takram design engineering (takram).

Tagawa: takram is a design engineering firm established by myself and another colleague in 2006. Design and engineering represent two major aspects of product creation. Rather than choosing to focus on one or the other, we wanted to take on the challenge of creating a new type of design work that integrated the required elements while straddling the two fields. In doing so, our aim was not to deny the existence of designers or engineers. Instead, we looked for what had been lost in the gaps between these two clearly demarcated disciplines. To put it another way, we felt there was a role to be had in filling these gaps.
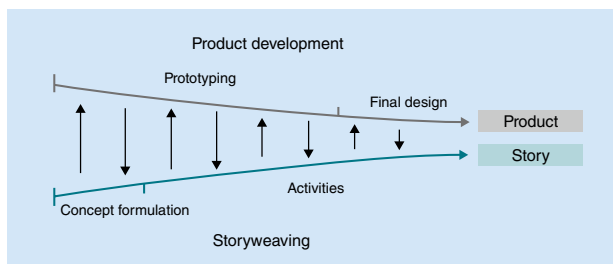
Ariyoshi: I have seen your work. Your activities not only involve the design development of commercial goods such as user interfaces (UIs), but also deliver very artistic design solutions that cannot easily be considered as engineering.

Tagawa: There are two aspects to the job of design: that of creating solutions and that of creating visions. In our work for clients, which involves us in collaborating with manufacturers on the development of new products or services, what is needed is skill in the creation of solutions so that a set of constraints can be successfully transformed into product features. In contrast, it is the ability to express a vision that matters more for work that involves a high degree of presentation, such as exhibiting at a trade show. What you could call our culture comes about from how we equip ourselves with a clear recognition of the activities and concepts that form this pair—as well as of present and future, real and abstract—and that we move back and forth between them. I believe that this provides us with perspectives that would not be available to us were we to limit ourselves to one side or the other, and it prevents our creativity from stagnating.

Storyweaving

Ariyoshi: My team is a group of in-house designers in an organization. Due to this very reason, creating real-world design solutions is our value. However, as Hitachi is focusing on the Social Innovation Business, which involves the construction of more intelligent solutions for social infrastructure, it is becoming increasingly common for our product and service designs to require us to look 10 years into the future. Therefore, it is essential for us to possess an imagination that is capable of identifying social values 10 years ahead. Recently, we have focused on ethnographic research, a method for researching society and consumers using fieldwork from an anthropological perspective. We have been utilizing this research method to conduct actual research for railway maintenance and repair work on the

Interaction of Storyweaving and Product Development.

back of elevators. This is like pre-designing the blue sky 10 years in advance while conducting real on-site research. The demand for this sort of fairly complex design is actually growing. As you have noted, both solution making and vision making are becoming requirements for design. There is so much to learn from your activities. The prototyping and storyweaving workshop[1] is one example.

Watanabe: We have a design methodology at takram called "storyweaving" that has emerged from our past work on product development and other design engineering projects. We have been using it recently in activities such as workshopping or the training we perform for corporate clients, and it is based on a desire to help the people involved in product creation in a broader sense than just the design and other aspects of product development. Storyweaving is a way of taking the concept established at the start of a project and refining it into a story set in a richer context through an ongoing and flexible process of revision involving repeated prototyping. We use the terms "prototyping and storyweaving" to describe the overall process of the product development or design project based on this storyweaving. These two approaches allow us to represent both the real and the abstract sides of product creation, and we believe that it is important to proceed with both in parallel.

Ariyoshi: As for a conventional product development project,

the proceeding process is either to follow the pre-defined concept simply or to add the concept as the background explanation afterward for an existing product. Isn't this well-known?

Tagawa: While this may have been acceptable in the past, the current rapidly changing social environment means that any time lag between the storyweaving (concept formulation) and prototyping will result in the product not keeping up with the times. As factors such as the constraints or competition continue to evolve during development, rather than setting the concept in stone at the beginning, what I believe is required is a dynamic process that converges on a solution through repeated interplay with the actual prototyping work, and in which both sides are able to be freely modified.

Ariyoshi: If we explain "prototyping and storyweaving" statically as an approach to product development and its background description, the value will inevitably become much lower. If we determine the concept rigidly from the beginning, there will be a danger of inhibiting creative thinking. So, it is essential for us to be able to revise our own work constantly within any dynamic processes.

Tagawa: In the case of Internet services, for example, it has become normal practice to start by releasing a beta version and then to enhance it through interaction with the wider world. As people's idea of a product increasingly includes the services associated with it, the design can no longer be kept separate from the context in which the product will be used.

Tangent Sculpture

Ariyoshi: Our younger designers have attended your workshops. All of the activities from the workshops were very useful and helpful for our designing practically. The detailed content of your specialties are described in a published booklet called "Storyweaving."[2] So, I will not get

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Graduated from the Faculty of Engineering at The University of Tokyo in 1999. Completed course at UK Royal College of Art in 2001. On returning to Japan, participated in Leading Edge Design. Established takram design engineering in 2006. He has been involved as a design engineer in product development in a wide range of fields extending from hardware to software.

Kotaro Watanabe

Design Engineer, takram design engineering

Graduated from the Faculty of Environment and Information Studies at Keio University. After receiving training in Europe through the Ministry of Economy, Trade and Industry and being involved in a venture business startup, he joined takram design engineering in 2007. His projects have ranged from user interface designs for the latest digital devices to the creation of art installations, and he has conducted workshops and other activities based on his own theory of "combining prototyping and storyweaving."

into it. However, I would like to hear more about one of your activities called "Tangent Sculpture," which has impressed me very much.

Watanabe: The tangent sculpture activity involves using a prose poem to express an idea such as rain without actually using the word "rain." By "telling without saying" the word in question, the aims of the exercise include redefining the true nature of the word or making explicit the implicit knowledge of the project members.

The risk with projects that involve working as a team or across a number of departments is that each person will proceed on the basis of their own ideas about what key words or concepts mean. Although the image that a word conjures up in each person may well be different, discussions proceed on the assumption that it means the same for everyone. These differences then do not become evident until the design finally starts to take shape. This is both inefficient and very risky. Instead, we believe that banning the use of particular words in project discussions can in fact bridge differences in understanding and bring out the maximum benefit from those words.

Ariyoshi: Currently, we are focusing on utilizing experience design for enhancing customers' values in product systems and services. This is not to determine customers' values without any logic, but actually it is to observe the facts using proven methodologies, then to predict the plausible future images that connect to technology. It is also possible that our predictions are different to the way it has been perceived. In fact, although we are exploiting experience design, an experience itself is not something that can be designed. While keeping this notion deeply in our hearts, we are aiming to inspire our customers by designing satisfactory customer experiences with great ideas. As for this designing process, your Tangent Sculpture approach has actually provided a unique role. Let me simply describe Tangent Sculpture.

Expressing experience design needs a vocabulary. But, one cannot input any vocabulary randomly. Instead, it involves tackling with numerous Tangents. By this process, the definitions of vocabulary will be revealed or embedded in the sentences. Then, at the end, the targeted value will appear as a Sculpture that stands very close to the essence. Is this correct?

Watanabe: That's right. It's about being able to share the contexts or stories that lie behind objects, both within the team and externally. Whether you can get a fulsome appreciation of them from the things you create. Tangent Sculpture can perhaps be thought of as a way of ensuring that this happens and getting at the true nature of something by densely layering the contextual Tangents.

Tagawa: While there are many design and other product creation techniques that people have devised in the past, we are putting the storyweaving method of product creation to the test in the hope that there will be ways of controlling reality more effectively. In an environment in which trends in product creation are undergoing major changes, technology is progressing at an accelerating pace, and products are taking on new forms, we will be glad if we can make practical product creation a highly imaginative and stimulating place by thinking about and trialing leading new methods. Surely it is in situations imbued with this sort of energy that innovation arises?

Ariyoshi: We also would like to pursue such a design workplace that can contribute to social innovation. Let's work together on initiating the new disciplines for design. Thank you very much for your time today.

Tsukasa Ariyoshi

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Joined Hitachi, Ltd. in 1983, has worked at the Design Center (since renamed the Design Division) in a management role, and has been involved in the design of equipment and systems in various fields, including home appliances, video equipment, information products, manufacturing, public infrastructure, medical instruments, and rail systems. After working at Hitachi Design Centre Europe and the Rail Systems Division, he was appointed to his current position in April, 2011.