

Technotalk

Seeking a “Sense of the Near Future” in Cities

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In response to the expected rush of large-scale development projects in Kanto area and the increasing demand for the renovation of existing buildings, requirements to create new urban environments and building environments are rising in Japan. In overseas markets as well, interest in adopting building systems capable of accommodating new environments is increasing in emerging countries that are undergoing an acceleration of economic growth and the gravitation of populations to metropolitan areas. Against this backdrop, the Building Systems Business Unit (BSBU) will cultivate our elevator & escalator business and building solutions services business by aspiring to offer congenial mobility services with consideration of spatial expansion in accordance with our core concept of systems that proactively anticipate unconscious human behavior.

The Work of Architects is Like a Peephole for Peering into a Civilization

Sato: We at BSBU are working to develop not just elevator & escalator related businesses but also solution services for buildings in the same business domain. Despite the fact that these businesses are deeply tied to real estate and architecture, we are surprisingly lacking in knowledge on urban development and construction.

For this reason, we would like to talk about urban development and construction with professor Hiroshi Naito, a world-renowned architect.

Naito: I hardly believe that your comment is true since Hitachi is involved in many ways in the area of urban development and construction.

Sato: It's not what you might expect, is it? By the way, I understand that you first embarked on the path to becoming an architect through experiences that you gained during your travels around the world in a young age. Just what sorts of experiences would help someone become an effective architect?

Naito: After completing my master's program, I spent about two years working at the office of architect Fernando Higueras in Spain. When I subsequently attempted to return to Japan, I vowed to try returning by land as much as possible and ended up roaming for half a year on the Silk Road. This region is the exact opposite of places like Manhattan in New York where one can see towering modern skyscrapers dominating the landscape. I traced a path by riding buses from Turkey through Iran, Afghanistan, Pakistan, India, and Nepal. While the Middle East at the time was not

as turbulent as it is today, I can look back now and recognize that what I did then was still rather foolhardy. Nevertheless, I was able to gain priceless experiences on that trip. When you see the world while traveling by land, you see how people's lives and the climates of the places where they live change gradually from one location to the next. This is something that you cannot discern if you were to simply travel directly to a given place by airplane. I was able to gain a first-hand exposure to changes that are linked to culture and landscape.

While it is difficult to explain how this has specifically affected my own brand of architecture, I believe that it was a very good experience that helped myself to open up important perspectives for thinking about ways that communities ought to exist and about urban planning.

Sato: I'm rather envious to hear about such difficult-to-obtain experiences that you were able to enjoy on your long and slightly risky journey. Let me add another point about my envy of you. We, BSBU, may work on same worksites with architects like you, but architects are those who are respected for their creativity and who are engaged in an occupation that is the object of envy for us. However, I reckon that the act of creation must be difficult for you given that architects are both scientists and artists at the same time. Could you share with us your personal opinions on the work of architects?

Naito: A famous architect likened the work of architects to “a duck's webbed feet.” This is because, while a duck might appear to be smoothly and gracefully swimming in her / his element, she / he is actually furiously paddling the water with all of her /

his might underneath the water's surface. An architect might show a cool demeanor to the world but the truth is that the work can only be pulled off by performing a slew of different tasks. It may very well entail difficulties in this sense.

I myself see the work of architects as a *peephole through which one can peer into a civilization*.

When we engage in work as architects, we are intimately connected to economy, culture, & arts; exposed to ups & downs of the economy, monetary flows, and various areas of laws. We are also able to witness skills and technologies used not just in construction but in all sorts of other fields as well. For example at homes, we are capable of seeing human relationships and even human psychology. Architects are afforded extensive, even if only partial, glimpses into various different aspects of the world in which we live. This is exceedingly interesting and also a source of spiritual nourishment. Indeed, it's possible that this is the case for all kinds of jobs. Anyone can obtain something good out of paddling the water for all he or she is worth.

Bringing Forth Functional Aesthetics and Structural Aesthetics Against the Current of the Times

Sato: So while you've been involved in many projects, including projects for public buildings, I'd like to ask you—and I realize that this is probably a difficult question to answer—to describe the project that you've felt most strongly about in your career to date.

Naito: If I were to narrow it down to one, I'd have to say it is the Sea-Folk Museum for the simple reason that it represents my point of departure on my journey as an architect. I was asked to design this structure in 1985, and the project was completed in 1992. It took seven and a half years from start to finish during the period that overlapped the years of the bubble economy. In the midst of the bubble economy that kept Japan in a frolicking mood, I was tasked with designing an ultra-low-cost building known as the Sea-Folk Museum on the edge of Toba City in Mie Prefecture.

Sato: So you might say that it was a job that ran counter to the prevailing current of the times?

Naito: Yeah, back then, among architects in Tokyo, everyone was bragging that she / he was working on jobs from which she / he earned 2 to 2.5 million yen per *tsubo* [a unit of measure equal to approximately 3.3 square meters]. At the time, I had to construct a repository of a museum for 420,000 yen per *tsubo*. It was a very difficult project that I struggled with constantly.

Nevertheless, I believe that my ideas and the rough time I had during those years contributed in a positive way to my professional development that can still be felt today.

You might wonder why I devoted myself to such a problematic project. I did it because there was something the museum possessed that resonated with me personally. The Sea-Folk Museum is a museum that has collected all sorts of folk materials, including tools for living used by local residents; these materials consist primarily of fishery tools used by Japanese fishermen. Firstly, the repository was built, and the collection had 20,000 items at the time of my design—including everything from small items like fishhooks to large wooden boats. I heard that the number of the items is over 60,000 as of 2016. Of these items, 6,879 have been designated as important tangible folk-cultural properties. Moreover, most items so designated were in actual use until the 1960s, which means that these items had been designated as cultural properties at the time of the construction of this museum even though it had only been twenty to thirty years since they were last used.

Sato: It sounds great that a simple theme was incorporated into a museum to house items designated as cultural properties during the bubble era. I have to wonder how these recent items came to be designated as cultural properties.

Naito: This came to be because the lives of Japanese people underwent enormous changes in the 1960s. Since you and I have been friends since childhood, I'm sure you're aware of this. When we were kids, there was a shift that occurred at some point when the material used for miniature models changed from wood to plastic. The emergence of plastic models marked the timing of several changes. With the imports of injection molding machines for plastics from the United States, plastic products came to be found and used everywhere in our lives. Fishing nets went from being made of linen to being made of nylon and fishing boats too went from being made of wood to being made of fiber-reinforced plastic (FRP) overnight. Thus, things that are in common use can suddenly become valuable cultural properties one day. This is because, since products for daily use are consumables, they are destined to disappear in a very short time.

Sato: So it seems that the Sea-Folk Museum is not simply a museum but is rather a museum that conveys the sort of connected changes that you experienced on the Silk Road.

Naito: I believe that I naturally became passionate about this project since the museum was the one that

enabled visitors to get a real feeling of such a dynamic era—that can be described as a chemical revolution—that our generation experienced. I had no inkling at the time that I could gain widespread renown for this project. It simply piqued my interest, which caused me to engage in it with my utmost effort. As soon as this project was completed, the bubble popped, and everyone was amazed to see that structures could also be built in the way how I had designed this museum. Yet, in the years when I was working on the project, I was rather self-absorbed and working with a sense of desperation.

Sato: During the bubble years, anything you might have wanted to procure must have been expensive



Hiroshi Naito

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Graduated from the Department of Architecture, School of Science and Engineering, Waseda University, in 1974, and completed a Master's Course at the university in 1976. He established Naito Architect & Associates in 1981 after stints working at the office of architect Fernando Higueras and the office of architect Kikutake Kiyonori. Between 2001 and 2011, he served in a number of successive posts, including professor of the Department of Civil Engineering at the School of Engineering, the University of Tokyo, and Executive Vice President of the university. Naito has been the recipient of numerous awards, including the Prize of the Architectural Institute of Japan and Yoshida Isoya Award. He has been a special committee member of the planning subcommittee of the Tokyo Scenery Council since 2006. Since the year, Naito has been involved in urban development of the central area around Shibuya Station and presently serves as the deputy chairman of the Coordination Committee & the chairman of the Design Committee for the Central Area Around Shibuya Station. Since the Great East Japan Earthquake struck, Naito has served on various committees, including the Iwate Prefecture Special Committee for Tsunami Disaster Prevention Technologies, and helped to formulate municipal urban development plans with an eye towards promoting the reconstruction of Iwate Prefecture. Among his recent books are *Ba no Chikara* (Power of Field) and *Kankyo Design Kogi* (Lecture on Environmental Design).

and difficult to obtain. You worked on this project for about eight years dealing with such circumstances. While you ultimately achieved the success through the recognition you earned from this project, it was likely no easy matter for you, was it?

Naito: That's right. The most difficult matter was the cost of everything. As we see today, unit construction prices back then were steadily rising. Against this backdrop, I was compelled to make sure that the structure was highly durable for a museum while at the same time working within the constraints of an extremely low budget. Numerous requests were fielded from the museum and the Agency for Cultural Affairs.

For example, they wanted a flexible large space devoid of pillars for the repository. Even though such a request cannot be accommodated without leading-edge technologies, I was required to find a low-cost solution.

First, after thinking about how I might be able to reduce costs, I decided to personally ascertain the entire process of construction materials from manufacturing to logistics.

I started by investigating just what expenses were being incurred at each step, including production in the factory, transportation and assembly. This straightforward investigation was thoroughly undertaken down to each small component and entailed the ascertainment and controlling of costs. This work required about double the work that was required for a construction firm to prepare a quotation. Needless to say, it was a grueling task.

Sato: That must have been quite a lesson for the construction firm in charge of this project as well, I imagine.

Naito: Yet, I was very lucky at the same time thanks to the character of the manager of the on-site office from the construction firm. This manager valued the spiritual connections he had with craftsmen and workers. At the time, skilled workers generally wished to go to Tokyo where the wages were good. Thanks to his character, however, we were able to field a large number of excellent, highly skilled, and motivated craftsmen & workers for this project. Everyone had pride in his or her own work. These factors allowed us to build such a fine building.

Sato: It looks like you benefited from the arrival of many workers who worked with passion and motivation. Although these qualities are not physically tangible, they are very important for manufacturing activities. This was very fortunate for you as an architect.

The biggest characteristic of your works is your emphasis more on the overall structure of a building

than on its superficial form. The Sea-Folk Museum is a typical example of this emphasis in practice. I believe that the creation of functional beauty and structural beauty through the pursuit of structures and the origin of the buildings has enabled you to deserve many awards. The Sea-Folk Museum came to be built by an architect who was operating against the prevailing current of the time while facing numerous constraints. That is something truly amazing.

So having gotten your start with the public building, did you go on to design many other public buildings?

Naito: I've since fielded many such projects as requested by public-sector clients, while I've done private-sector projects as well. I've built up quite a track record of such public jobs, including the Chihiro Art Museum Azumino (Nagano Prefecture), Tenshin Memorial Museum of Art, Ibaraki (Ibaraki Prefecture), Tokamachi Reference Library (Niigata Prefecture), Makino Museum of Plants & People (Kochi Prefecture), Bashamichi Station (Kanagawa Prefecture), Shimane Arts Center (Shimane Prefecture), Hyugashi Station (Miyazaki Prefecture), Kochi Station (Kochi Prefecture), Asahikawa Station (Hokkaido), Shiiki Hall at Kyushu University (Fukuoka Prefecture), Azumino City Hall (Nagano Prefecture), and the Gymnasium in Shizuoka Prefecture Kusanagi Sports Complex (Shizuoka Prefecture).

Sato: The exhibition hall of the Sea-Folk Museum that was built later in the project became famous for its wooden structure. Have you then continued to design buildings with a focus on wooden structures?

Naito: The exhibition hall that I designed after the repository was built with wood. Up to that point, there weren't that many architects who took this approach. So far as it goes, I will say that I believe that I am a pioneer when it comes to timber construction. I am somewhat bored, however, with how timber construction is popular in fashion now.

When the Kyoto Protocol was formulated, people proposed that we should use wood in hopes of addressing global environmental issues. The Japanese Government responded by mandating, whether we liked it or not, the use of wood. As a result, it is my belief that wood is being used to such an extent that I would rather not see wood there.

Sato: So for you, the growing use of timber construction is a positive thing but you don't like the use of wood is being forced.

Naito: Wood is the most difficult material to handle. Steel and glass are modern industrial products that precedents in the Western world adopted in the twentieth century. For this reason, you can obtain solutions by taking a reasonable approach to using

such materials. The same cannot be said of wood, since it's a natural material.

Wood lies outside the scope of modern technology. The properties of wood differ depending not just on the type of tree but also on the locality. The capricious nature of wood means that you need to very carefully choose the types of applications for which you use this material. Timber construction is both delicate and complex. I believe that it will take another twenty years for computers to advance enough to somehow make technologies for analyzing wooden structures in a way that accommodates diversity of woods. Until that time, each one of us will have to carefully harness our experience and the wisdom of craftsmen.



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Joined Hitachi, Ltd., in 1973 and served since then in various positions, including division manager of the Industrial Systems Sales Division of the Information & Telecommunication Systems Business Management Division and general manager of the Building Systems Business Division of the Urban Planning & Development Systems Group (currently known as BSBU), before being appointed president & COO of Hitachi Automotive Systems, Ltd., in 2013. He was appointed Senior Vice President & Executive Officer of Hitachi, Ltd., and president & CEO of the Urban Planning & Development Systems Company in 2015 and has remained in his current position since 2016. Sato concurrently serves as president of Hitachi Building Systems Co., Ltd.



Sato: So timber construction is quite a profoundly mysterious subject matter, isn't it? It's interesting to note that unlocking this mystery may allow us to apply what we uncover to steel- and glass-based construction technologies.

Naito: That's right. It's possible that the most technically difficult type of structure is wooden. While the construction of a large steel-framed structure is not really as difficult as you might imagine, seriously constructing something out of wood is a really difficult endeavor. For this reason, I expect that this technology will in future constitute a leading-edge technology.

Long-term Strategies Generate the Attractiveness and Competitiveness of Urban Areas

Sato: While you may be an architect, you also devote significant efforts to promoting urban development and the development of local communities, don't you? For example, you are overseeing an urban revitalization project around Shibuya Station and have worked to promote the rejuvenation of downtown cores by designing station houses for Hyuga City Station, Kochi Station, Asahikawa Station, and others. Presently, what do you believe is needed for urban development in Japan?

Naito: What worries me is that we appear to be in the midst of another construction bubble. Every bubble eventually pops. When it does, it is important to determine just what remains in place to be bequeathed to the next generation. Dramatically different futures await depending on whether urban investments are consumed as a flow (of maintenance and upgrading costs) or whether urban investments are used to increase the stock (of infrastructure).

Of course, both stock and flow are necessary, such that a city can be revitalized by carefully rebuilding commercial facilities while maintaining its public buildings in perpetuity. This is why I believe that a vision or strategy for dividing and harnessing stock and flow investments is necessary. Japan tends to be averse to a culture of building long-lasting stock. Attractiveness and characters of urban areas are generated in accordance with how we will have long-term outlooks in Japan.

Sato: We can currently see many examples of contexts in which construction investments are expanding. For example, in Tokyo, urban development with an emphasis on robust over disasters is being carried out. Facilities to host international events and the Chuo Shinkansen Maglev Line are other examples. On the other hand, there is uncertainty as to the future as we simply do not know how much longer this construction boom will last. In this sense as well, a long-term perspective is important.

Naito: This is the danger that is inherent to capitalism. If you go too far, you end up with a bubble. On the other hand, a situation can be very problematic when it deflates. Right now, we complain constantly about how we have too few people to do the things that need to be done. The same thing was happening during the bubble thirty years ago. Unit prices back then were driven up based on this rationale. I get the feeling that we are beginning to see exactly the same phenomenon emerge again.

Sato: It seems that it is important that we consider how we can generate more attractive and unique urban areas through development in this context and these characters will become competitiveness of the areas.

Naito: The urban revitalization of the area around Shibuya Station—which I am personally involved in—is

a project that is being promoted by Shibuya Ward as a means of achieving sustainable urban development. I often say to government administrators and local residents: "Up until now, cities have been choosing people. Going forward, however, we will see people choosing cities." For this reason, we must build cities that have attractiveness. In our plans, we intend to build six skyscrapers in a special urban revitalization zone centered on the station. Nevertheless, that alone will not get this part of town to be chosen by people. With urban development, there is no complete form to be obtained as you do with architecture. For a city to be selected, a long-term vision and strategy to enable the city to continue to generate attractiveness & uniqueness and to define how we want to see the city as a whole evolve are important. Such an approach is what generates attractiveness.

Sato: How would you describe the competitiveness of a city like Tokyo?

Naito: The advantage of Tokyo is the presence of many cities connected to the Yamanote Line. This feature is rarely found anywhere else in the world. While we might describe certain structures as high-rise buildings in Tokyo, they are generally considered mid-rise buildings in other places on earth. While this may be due to restrictions in place to accommodate Haneda Airport, I've recently come to believe that the heights of buildings in Tokyo might be ideal, as one might be led to think by examining the Marunouchi area. The Yamanote Line is home to various districts. Shibuya, Shinjuku, Ikebukuro, Ebisu, Sugamo, Ueno, and others each have their own distinctive character and attributes. I am convinced that this point constitutes Tokyo's attractiveness and is something that is not found overseas. Thus, it would not be right if Shibuya and Otemachi were the same; indeed, each needs to stand in contrast to other cities. Since Shibuya is one of many important players, I am engaged in work to draft a strategy for this purpose.

Sato: So you're saying that these districts might not be able to win on their own but that they should pool what makes each of them unique in order to take on the world. While there appears to be much work left to do in Tokyo, what would you say are the constraints?

Naito: From having been involved in numerous urban development projects nationwide, I am very much aware that such statutes as the Building Standards Act and City Planning Act are sometimes impediments to efforts to revitalize an area by harnessing what makes it unique. The adverse effects of existing laws and turf-minded governmental administrative bodies that have an impact on cities came to be apparent in the reconstruction of areas affected by the Great East

Japan Earthquake. To engage in captivating urban development work and revitalize areas dynamically, societal and political systems will need to undergo a revolution, such as by tearing down statutory and systemic walls and encouraging the flexible operations of laws.

Sato: We've also experienced what it's like to run up against vertical regulatory impediments and barriers associated with an outdated culture in the planning of smart cities. Forgive me for venting but we devoted ourselves to this theme out of a belief that smart cities can make a positive contribution to society. We have yet to see any signs, though, that we can make a real go of this in terms of business profits.

Naito: Since Hitachi owns various technologies, I believe that you will successfully reap the benefits of connecting these technologies together with a persevering attitude. Perhaps now can be likened to a period of sowing.

Study of Social Infrastructure Created by Transplanting Positive Elements of Architecture into Civil Engineering

Sato: By the way, when I visited you before at the University of Tokyo, you mentioned that you were involved in a plan to redevelop the university campus.

I also heard from someone that you managed to transform the civil engineering department at the university (currently the Department of Civil Engineering of the Faculty of Engineering) into a department that was immensely popular among students. Is there any connection between this and the theme of the campus plan?

Naito: First, with respect to the notion of the campus plan, I should note that national universities entered a period of great transformation a bit after I had begun working on one. They have become independent entities. In other words, they were told to become independent by securing outside sources of funds rather than rely so completely on the national government. Rather than focus just on research areas, we see that more and more institutions are constructing buildings with the support of benefactors who contribute such buildings. The framework by which an implicit understanding on campus matters under common sense of those had started to break down. With a desire to do something in response, I was appointed as Executive Vice President of the university. In this connection, I drafted new rules and produced a framework within which these rules would be enacted. This was a highly complicated game and the process for reaching an agreement was

arduous indeed. Nevertheless, I somehow secured everyone's agreement within the university before proceeding to build.

Sato: So it was like a job involving the drafting of rules for urban revitalization on a small scale.

Naito: You could say that... When I first began working in the field of civil engineering, I was most surprised and impressed by the sense of crisis felt by the professors in this department. At the time, the popularity of civil engineering was waning. While the long-cherished desire of those working in the field of civil engineering is to contribute to the public good, the meaning of the term *public good* was no longer clear due to a process whereby society was becoming more diversified and mature over time.

It was then that I took it upon myself to make it my mission to transplant the positive elements of architecture into the field of civil engineering. I had regarded architecture as an expression of the *self* by way of the creation of a work. This is the polar opposite of civil engineering, which corresponds to the *public*. However, there was also the sense that architecture continues to question the notion of the *self*, such that the *self* has become deprived of clarity. Put in a positive light, it means that architecture offers keen insights into the human soul as it confronts the daily lives of people. It can also be described in terms of designs that manipulate the forms of tangible objects. Thus, I believed that I could create a portal to such an amalgamation of ideas.

There were also times when professors lodged together for three days and two nights and discussed matters from morning until night. This is something that is inconceivable in any other department of the university. The serious efforts put forth by these professors helped to make the study of civil engineering popular among students who we now see wish to major in this subject.

And our students are astute. Our attitude—one that embraces the task of formulating a campus plan, of studying civil engineering, and of breaking out of our old shells—must surely have touched a chord with students.

Sato: Speaking of shells, we are pursuing the global expansion of our business in an effort to break free of our own shell. We are seeking to expand our business in China as well as the rest of Asia, the Middle East, India, and elsewhere. In such regions, are local markets seeking something from development and architecture that is different from what is sought here in Japan?

Naito: For example, the redevelopment of port areas in association with changes in logistics is an issue in

every country around the world. Western countries are adept at putting together urban strategies and do things like convert industrial complexes into museums and—these days—spend capital strategically. Japan is weak at carrying out such strategies.

While I am not especially knowledgeable about local conditions in emerging countries, the issue of securing an energy supply that can form the basis of cities in the future could arise in any emerging country whose economy is growing dynamically. For this reason, it might be necessary to propose energy-minimum cities and solutions for survivable buildings as part of a medium- to long-term vision. Rather than a proposal that looks great on paper, a strategic proposal that truly considers the future of local society will ultimately be sought.

Sato: We really must make proposals that take local conditions and the future into better account.

Getting a Sense of the Near Future

Sato: Incidentally, you are also famous for producing designs that accommodate users by harnessing the advantages of the land on which your buildings are constructed and the unique characteristics of the materials you use rather than for simply emphasizing the structure itself.

Our business too is based on a core concept that entails the provision of products and services that proactively anticipate unconscious human behavior. We seek to use our products and services to *make people's lives more pleasant, such as when they move between cities and between facilities, and to pursue beauty, such as through notions of comfort and a state of harmony between buildings and space.*

In order to make this concept a reality, we asked Naoto Fukasawa, with whom you are well acquainted, to engage in design work and were able to deliver our first concept elevator model the other day. This model features a design characterized by elements that are rounded to the tiniest detail. Space to prevent any sense of oppression from affecting users has been created. We would like to collaborate with clients to deliver high value-added services into which we will also proactively incorporate advanced IT. What do you think Hitachi will need to do at that time?

Naito: I believe that the key term for getting a company that—like Hitachi—possesses a full set of technologies to harness its competitive advantage is *near future*. The crux of the matter is as follows: can you close the gap between the present and the true needs of the market in the near future?

It might be fun to try asking a broader range of ordinary people to share their *sense of the near future* rather than focus on conventional supply-side marketing. Perhaps we can discern real needs by taking such an approach.

Sato: *Sense of the near future*—It's a real nice way of putting it. Naoto Fukasawa's concept model evokes a sense of the near future. We will make proposals of this sort and solicit feedback.

Naito: With products, it's particularly important to put forth a modest vision of the future. A vast number of people use elevators each day in Tokyo alone. If you think that we are positioned to offer something new that can be felt by this vast number of users each time they ride the elevator, that's rather mind-blowing.

What is everyone seeking? One possible solution might be the softness inherent in Fukasawa's concept model. We may even be able to add the notion of providing information to this model.

Some would suggest that we should focus not only on the time during which users are riding an elevator but also on the time during which users are waiting for an elevator to arrive. The challenge of how to satisfy users who are waiting for an elevator might very well be more important than the challenge of shortening the time spent by users riding an elevator.

Sato: That's right. These days, I am fond of telling my engineers, "We should think of us as providing not elevators or escalators but robot transformers and smart mobility services." In particular, elevators are connected these days through networks to enable data collection and remote maintenance functions to be carried out. For this reason, I believe that it will be possible to upgrade these functions and have elevators harmonize and coordinate with the entire building through the use of, for example, artificial intelligence.

Naito: If we assume that the time it takes to reach your destination is fully spent traveling from one point to another, then elevators are a means of mobility that is naturally expected to link up with other means of mobility. We will surely begin to recognize that Hitachi, with its full set of technologies, is capable of success in this area by employing a broad outlook and its extensive imagination in the pursuit of gently embracing this entire framework.

Sato: You're right. We are presently wondering whether we might be able to offer service robots as a service at end points of mobility. In September of this year (2016), we began a demonstrational experiment for a passenger service based on the use of EMIEW3, a humanoid robot produced by Hitachi, in Terminal 2 for domestic flights at Haneda Airport. This robot

doesn't simply receive passengers and offer guidance. It is expected to harness passenger needs and data obtained through such interactions to make service enhancements and gather data in facilities for the benefit of business operations.

Naito: Railway operators too have recently begun to understand the importance of stations and to explore their options. Among the jobs I'm currently involved in, urban development centered on stations can also be regarded as a way to invigorate end points for means of mobility. Likewise, it might be wise to adopt a perspective that seeks to figure out how we can enhance solutions from one end point to another with elevators and escalators as well. Perhaps you should come up with new ideas and services informed by a stance that focuses on improving the quality of spaces that are connected to elevators and escalators.

Sato: We really have to think about things with more and more flexibility, don't we? Speaking with you here today has made me realize many points of relevance. Thank you very much for your time.