

**Redefining the Elderly Care Industry Through Design Thinking:
New Industries and Co-Creation Opportunities Emerging from Industry-Government-
Academia Collaboration**



Miles Pennington

Professor, The University of Tokyo

Professor Miles Pennington specializes in design-led innovation and serves as Director of the DLX Design Lab. After holding positions as Professor and Head of Department at the Royal College of Art in the UK, he joined the Institute of Industrial Science at the University of Tokyo as a Professor in 2017 and also serves as Special Advisor to the President of the University of Tokyo.



Kenji Uemura

President & CEO, As Partners Co., Ltd.

Kenji Uemura leads both the senior care business, centered on assisted living facilities, and the real estate business, driving digital transformation in the care industry through IoT systems such as EGAO link®. After working in housing development and management at Recruit Cosmos and Takara Komuten, he founded As Partners in 2004. He also serves as Vice Representative Director of the Japan Association of Paid Nursing Homes.

As Japan's super-aging society continues to advance, the elderly care industry faces structural challenges such as labor shortages and increasing workloads, alongside a deeper issue: the loneliness of older adults. In particular, the fact that loneliness often persists, even after moving into care facilities, has become a critical unresolved issue that conventional care models and technology still have not been able to address.

As Partners has been improving operational efficiency through the use of IoT systems such as "EGAO link®" and AI, thereby creating more time for staff to interact directly with residents. By using this time to support each individual in "fulfilling their dreams," they are actively addressing the issue of loneliness from the front lines of care.

Building on these practices, they conducted a joint research project with the DLX Design Lab at the Institute of Industrial Science, The University of Tokyo. By applying design thinking (human-centered design) through observations and interviews, they redefined loneliness as a "relationship-based issue," revealing the potential for a new value-creation model that differs from traditional efficiency-focused care DX (digital transformation).

This initiative opens up new business opportunities across multiple domains, including technology, AI, data, and communication. Through social implementation and industrialization driven by industry-government-academia collaboration, it also holds great potential for co-creation with companies from various sectors.

In this discussion, we explored the social issue of loneliness that has emerged through our collaborative research, as well as ways to foster joy, connection, and a sense of purpose within elderly communities through design. We also discussed the potential for new value creation and co-creation.

"Loneliness" That Persists After Moving In: An Invisible Challenge in Care Settings

Prof. Miles Pennington (University of Tokyo):

When we began the research, the key theme that emerged was "loneliness," which I personally found very relatable. My own mother lives in a care home in the UK, and after moving in, her relationships, especially with friends, were disrupted, leading to feelings of isolation. Seeing her try to return home every day was heartbreaking. These experiences reinforced for me how serious the issue of loneliness among older adults is, and how it is something society must address collectively.

What Did the “Time” Created by IoT and AI Change?

Kenji Uemura (CEO, As Partners):

I started my career as a housing developer, working on senior housing. Over time, I realized that beyond the quality of buildings, what truly matters is quality of life. Each person has their own desired way of living, yet in reality, lives often become standardized. I wanted to create an environment where individuals can enjoy life in their own way.

However, staff shortages made this difficult. Although we initially faced many challenges, we are now increasing time spent with residents through the use of IoT and AI for operational efficiency. In particular, we run initiatives to help residents fulfill their dreams, which directly addresses loneliness.



Prof. Pennington:

In this research, we used human-centered design, visiting care facilities and interviewing staff, residents, and those around them to directly understand their desired lifestyles. Rather than acting as mere designers or consultants, we aimed to serve as a bridge between academia and industry, identifying overlaps and creating spaces where they can meet.

What Does Technology Change in Elderly Care?

Prof. Pennington:

I found Asheim facilities to be of very high quality, with a warm, home-like atmosphere. My mother’s care home in the UK is also excellent, but I felt there was an even higher level here. Despite the use of IoT and technology, the interior and environment remained very homely and considerate of residents’ needs. The care itself was equally warm. I was also pleasantly surprised by the large number of young staff, as in the UK, care work is often not attractive to younger generations.

Uemura:

For about eight years, we have been working to improve care quality and efficiency through technology, and we aim to expand these innovations across the industry. With Japan's population aging and its workforce shrinking, the key to solving these challenges is productivity improvement, with technology at the core. We have led various initiatives through private-sector collaboration to drive industry transformation.

Prof. Pennington:

Recently, generative AI such as ChatGPT has gained attention, and humanoid robots, especially in China, are rapidly advancing. Do you think robots will eventually take over caregiving roles?

Uemura:

They won't be able to handle everything, but they could cover a significant portion. However, the so-called "three major care tasks"—toileting, bathing, and eating—remain challenging. These forms of assistance also involve emotionally sensitive interactions and can be important opportunities to notice changes in a person's physical condition. For that reason, I believe there will ultimately still need to be human involvement. Therefore, improving operational efficiency and reducing administrative burdens should be the priority.



Why Is Industry-Government-Academia Collaboration Difficult?

Prof. Pennington:

The University of Tokyo conducts a wide range of research and education. However, research often ends at papers or academic presentations. By connecting research to society and involving the general public, we can strengthen these links. This is why the DLX Design Lab was established: to bridge the gap between academia and society.

However, there is a major gap between researchers and companies. We often call research outcomes “treasures,” and our work “treasure hunting.” It takes time, and sometimes results are not found. While this is natural for researchers, it differs for businesses. Understanding these differences in time scales is essential.

Uemura:

I deeply understand the perspective of companies; we must generate profits and make decisions based on timelines. Still, we recognize the importance of long-term research and value industry-academia collaboration. In Japan, discussions between government and the care sector tend to focus on regulations, with less attention to research funding.

Additionally, the industry itself is still fragmented, so we aim to lead efforts to unify it.

Prof. Pennington:

We must align perspectives when collaborating across sectors, especially regarding timelines and needs. Through continuous dialogue and the creation of frameworks for long-term research, we can achieve effective collaboration.

Uemura:

I agree. Aligning timelines is crucial, but so is aligning goals. There is great value in discussing what we ultimately aim to achieve together.

Who Will Solve the Challenges of a Super-Aging Society?

Prof. Pennington:

Industry-government-academia collaboration is essential not just for profit, but for solving real societal challenges. Technology will play a significant role in elderly care, but development is costly and requires government support. At the same time, caregiving is inherently human, so technology alone cannot solve everything.

Uemura:

I look forward to a future where all three sectors collaborate to tackle social challenges together.



About As Partners Co., Ltd.

Founded as a “lifestyle proposal company across generations,” As Partners pursues the well-being of people of all ages. Listed on the Tokyo Stock Exchange Standard Market, the company operates in senior services, real estate, and care DX support. It leverages strengths in DX through initiatives such as the IoT system “EGAO link[®],” AI-powered care planning, BI tools, and support services for other care providers.

Website: <https://www.as-partners.co.jp/>

About DLX Design Lab

Established in 2017 within the Institute of Industrial Science at the University of Tokyo, DLX Design Lab is an international design team. Through collaboration among designers, engineers, and researchers, it promotes innovative product and service prototyping, while also fostering co-creation and education through forums, exhibitions, and workshops.

Website [DLX Design Lab | University of Tokyo](#)
