

[RE]IMAGINE EDUCATION

A weekly Design·AI newsletter

CAN ONE WORKSHOP SPARK AN AI PROTOTYPE? PAPER CARPENTER'S DESIGN JOURNEY

Claudine Ang, Chief Sustainability Officer, Paper Carpenter, SUTD Academy Course Participant
In Conversation with Dr. Nachamma Sockalingam, OSP



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What does it take to move from using AI as a convenient tool to designing it as part of a meaningful business solution?

Paper Carpenter explored this question after attending an [AI Impact Series](#) programme on design innovation. The company was already familiar with using AI in its day-to-day work, but the workshop introduced a more structured way to connect technology with user needs, workflows and business intent.

Using the 4Ds Design Innovation process, “How Might We” questions and a Service/UX Blueprint, the team moved from broad experimentation to a more focused concept: Pappi.AI, an approachable AI Builder designed to support creative work through conversation, progressive guidance and real-time visualisation.

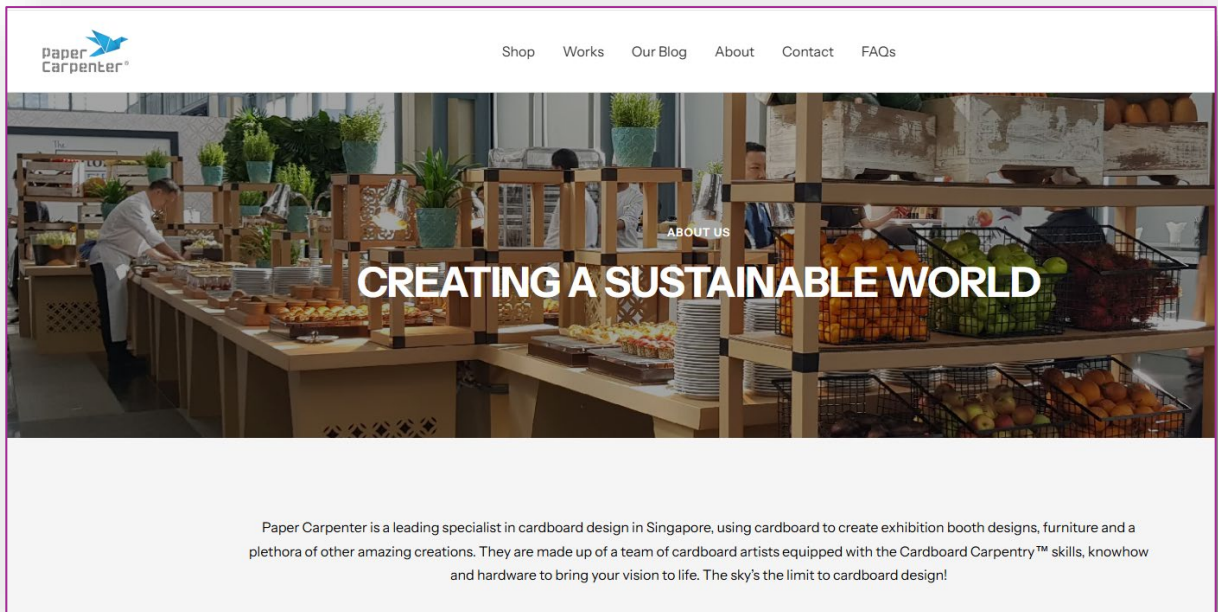
This story is not simply about producing an AI prototype in one workshop. It is about learning how to frame the right problem before building the solution—and how a clear process can turn existing AI familiarity into purposeful innovation. The biggest takeaway for Claudine was not learning how to use AI, but learning how to structure the innovation process around it.

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<https://papercarpenter.com/pages/brand-story>

To begin, what does Paper Carpenter do, and how does sustainability shape the company's approach to design and innovation?

Hello everyone, my name is Claudine, and I lead sustainability initiatives at Paper Carpenter. Paper Carpenter is a Singapore-based cardboard design agency specialising in sustainable and creative solutions for exhibitions, events, furniture, art installations and packaging.

We provide a one-stop service. From concept and design to fabrication and installation . We have more than 10 years of industry experience. A strong focus of our work is creating customised designs that are visually engaging while reducing environmental impact. By using eco-friendly materials, we help brands create memorable spaces and experiences without compromising on sustainability.

As a company, we are always exploring how design, technology and innovation can strengthen the way we work and serve our clients.

What prompted Paper Carpenter to step beyond its usual ways of working and join the SkillsFuture workshop at SUTD—and beneath that initial curiosity, what deeper challenge or ambition was the company hoping to address?

My primary motivation was a deep thirst for learning. At Paper Carpenter, we are used to transforming a flat sheet of cardboard into something functional, engaging and meaningful. But when it came to AI, we had the ideas and curiosity without necessarily having a clear framework to shape them.

I wanted to learn directly from design and innovation experts and understand how to systematically apply new methodologies to solve complex challenges at Paper Carpenter. The workshop gave us a way to move beyond simply asking, “What can AI do?” and begin asking more focused questions: “What problem are we trying to solve, who are we solving it for, and how might AI support that experience?”

In that sense, the motivation was not just to learn about a new technology. It was to gain a structured process that could help us turn an emerging opportunity into a thoughtful and practical solution.



Wider context of Singapore’s AI agenda

Shafeeq, S. (2025, August 17). *NDR 2025: Govt will help workers harness AI, redesign jobs, says PM Wong*. The Straits Times.

Prime Minister Lawrence Wong said the Government will help companies of all sizes, especially SMEs, harness AI to improve productivity and competitiveness. He also emphasised that AI adoption should be accompanied by job redesign and worker training so that Singaporeans benefit from the transition.

What was Paper Carpenter's experience of the SUTD SkillsFuture workshop, and how did the design innovation tools help the team move from a broad interest in AI towards a more clearly defined solution?

The workshop was incredibly insightful because it introduced us to design thinking as a structured way to approach innovation. Rather than starting with the technology or asking what AI could do, we first learned to understand the users, identify their needs and define the challenge clearly.

Through the 4Ds process—**Discover, Define, Develop and Deliver**—we learned how to move from broad observations to a focused opportunity. “How Might We” statements helped us frame the challenge, while the Service/UX Blueprint allowed us to map the full user journey, including the visible experience and the backstage processes needed to support it.

Once that foundation was in place, we could begin layering AI into the solution more purposefully. Instead of treating AI as an add-on, we considered where it could genuinely support the user experience, simplify complex tasks and augment the work of designers. This thinking shaped Pappi.AI as a conversational and approachable AI Builder, with progressive disclosure and a real-time 3D canvas.

The key learning was that AI works best when it is built around a well-defined human need. Design thinking gave us the framework to identify that need, and AI became one layer within the wider solution rather than the starting point.



Design journey before and after Pappi.AI

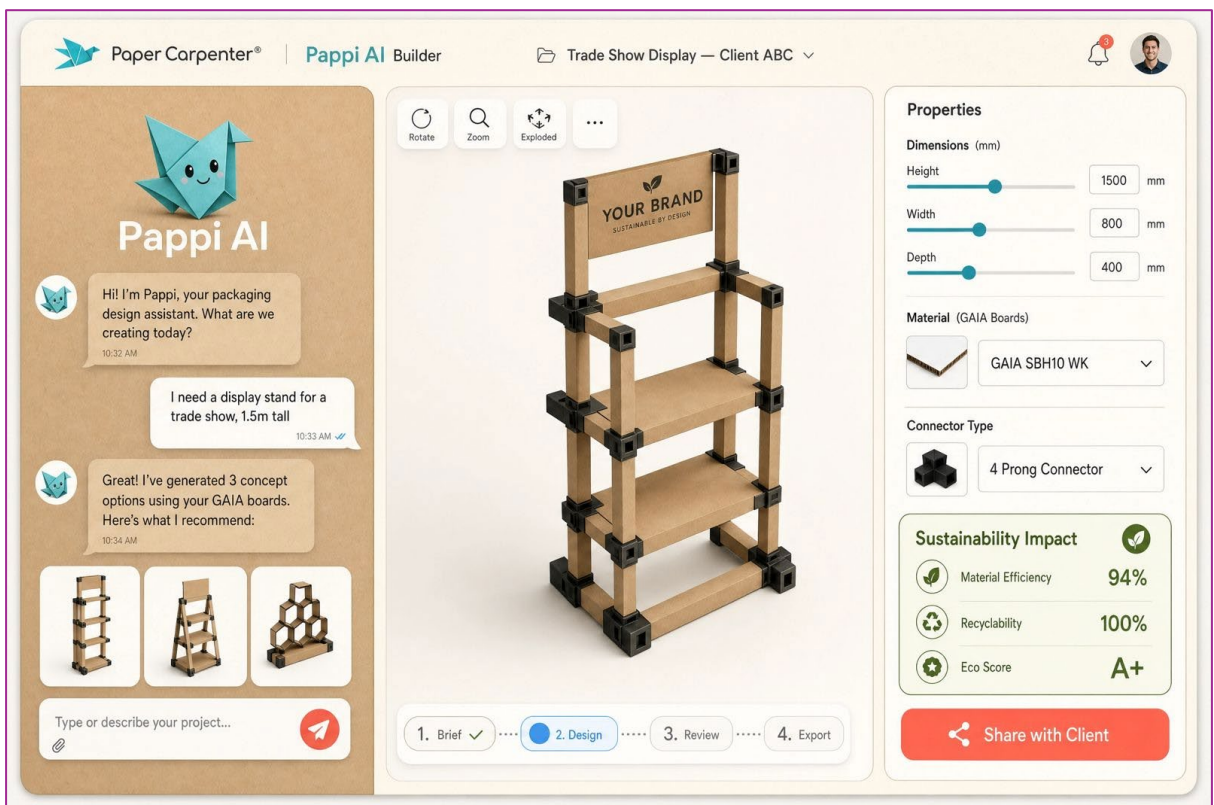
How did those design thinking insights translate into Pappi.AI, and what were you able to develop during the workshop itself?

The design thinking process helped us turn a broad interest in AI into a focused product concept. By mapping the user journey, we identified where users might need more guidance and where AI could make the design process simpler and more intuitive.

During the workshop, we developed the UI/UX direction for Pappi.AI, our AI Builder. Its conversational interface allows users to interact with the platform naturally, making the experience feel less technical and more approachable.

We also explored progressive disclosure, where information and options are introduced gradually so users are not overwhelmed. A real-time 3D canvas would allow them to visualise, adjust and refine their ideas as they work.

Finally, we created the concept for the Pappi mascot, combining “Paper” and “AI.” Drawing on my experience as a marketing professional, I understood that branding is not optional. It is how you turn a functional tool into something people remember and trust. The Pappi mascot reflects Paper Carpenter’s sustainable and playful identity, while reinforcing the idea that AI should support and augment designers rather than replace them. A strong brand makes technology feel human, and that was essential to our vision of Pappi.AI.



Pappi.AI conversational interface wireframe
developed during workshop

Beyond the prototype, what was Paper Carpenter's biggest takeaway from the workshop?

We were already familiar with using AI in our day-to-day work, whether for drafting HR letters, checking figures or cross-referencing reports. During the workshop, we were also able to work with the AI tools we were comfortable with, rather than being restricted to a single platform.

The biggest takeaway was therefore not simply learning how to use AI. It was learning how to structure the innovation process around it. The 4Ds framework, "How Might We" questions and the Service/UX Blueprint helped us move from scattered ideas and tool experimentation towards a clearly defined user need and a more coherent solution.

That structure changed the way we approached AI. Instead of starting with the tool, we began with the problem, the user journey and the intended experience, then considered where AI could add the most value.

For Paper Carpenter, this was the most important shift: AI became not just something we used, but something we could design into a purposeful, human-centred solution.

Paper Carpenter's journey shows that the real value of AI does not begin with the tool—it begins with framing the right problem. The SUTD SkillsFuture workshop gave the team a structured way to connect AI with user needs and turn experimentation into a purposeful prototype.

This is also a useful reflection for many of us, myself included. We may remember to start with the problem, yet still overlook the people who experience it, shape it and live with the solution.

Paper Carpenter's story invites us to ask: What problems are we solving, and for whom? The answer to that question should always come before AI.