

By Sheng-Hung Lee,  
PhD

**The rapid emergence of artificial intelligence (AI) has further intensified uncertainty, complexity, and the fragmentation of expertise.**

# Design Leadership Beyond Expertise:

## Communities of Practice in the Age of AI

*"I imagine a world in which AI is going to make us work more productively, live longer, and have cleaner energy."*

FEI-FEI LI, PROFESSOR OF COMPUTER  
SCIENCE AT STANFORD UNIVERSITY

**A** DVANCES IN MANUFACTURING capabilities and technologies, along with rising consumer education, have prompted many product-driven companies to move beyond selling tangible goods toward integrated product-service systems. Platforms such as Uber and Airbnb exemplify this shift, contributing to what business scholars Joseph Pine and James Gilmore described in 2011 as the experience economy in which value is increasingly created through orchestrated experiences rather than products alone. At the same time, global aging and demographic transformation are reshaping economic priorities. As the economy shifts toward what Joseph Coughlin, Director of the MIT AgeLab, terms the longevity economy, organizations must operate within increasingly multigenerational societies and workforces, which demand more inclusive and adaptive social and organizational infrastructures.

## Why does design leadership need to change?

The rapid emergence of artificial intelligence (AI) has further intensified uncertainty, complexity, and the fragmentation of expertise. AI systems now permeate everyday life, particularly in digital contexts, reshaping how knowledge is produced, accessed, and applied. Building on this trajectory, Joseph Pine recently introduced the notion of a transformation economy, one shaped not only by AI technologies but also by evolving organizational structures and leadership paradigms.

In the AI era, individuals and teams have unprecedented access to tools such as ChatGPT, while search engines and most software increasingly integrate intelligent capabilities. Knowledge has thus shifted from a scarce organizational asset to an accessible, widely distributed resource, challenging traditional assumptions about expertise. As a result, conventional leadership models centered on heroic individuals or expert-driven decision-making are no longer sufficient. Instead, design leaders are increasingly responsible for enabling collective sensemaking (e.g., reframing design challenges and interpreting outcomes), cultivating learning infrastructures (e.g., creating conditions for interactive and immersive learning, and fostering inclusive cultures of knowledge sharing), and orchestrating collective intelligence (e.g., integrating diverse perspectives and enabling teams to adapt dynamically).

The concept of “community of practice” (CoP) was first articulated by Jean Lave and Etienne Wenger in their seminal 1991 work *Situated Learning*, which framed learning as a social, practice-based process rather than the accumulation of individual knowledge. Broadly, a CoP refers to a group of people who share a common concern, set of challenges, or professional passion, and who deepen their expertise through sustained interaction and shared practice. Since the early 1990s, CoPs have been widely adopted in business and management contexts, primarily

as knowledge management tools to support professional development, facilitate knowledge transfer, and improve organizational performance.

In the context of today’s knowledge economy and AI-driven transformation, this article argues that such interpretations are no longer sufficient. For design and innovation leaders facing increasing uncertainty, fragmented expertise, and rapid technological change, CoPs must be understood not as informal learning communities but as a core leadership infrastructure. Reframed in this way, CoPs become a strategic tool for design leadership, enabling organizations to cultivate collective intelligence, sustain human-centered values, and continuously adapt practices in an era when authority is less defined by individual expertise and more by the capacity to orchestrate learning at scale.

## Community of practice revisited: from learning theory to leadership infrastructure

According to Wenger, a CoP can be understood in terms of three interrelated dimensions: community, domain, and practice (Figure 1, p.10). Community refers to a group of people bound together by shared values, relationships, or a common purpose. The domain represents a shared area of interest, expertise, or concern that gives the community its identity and coherence. Practice highlights active participation, emphasizing learning through doing; community members develop knowledge not only through discussion but also through sustained contributions, experimentation, and collective reflection. At its core, the CoP framework conceptualizes learning as a fundamentally social, cultural, and participatory process.

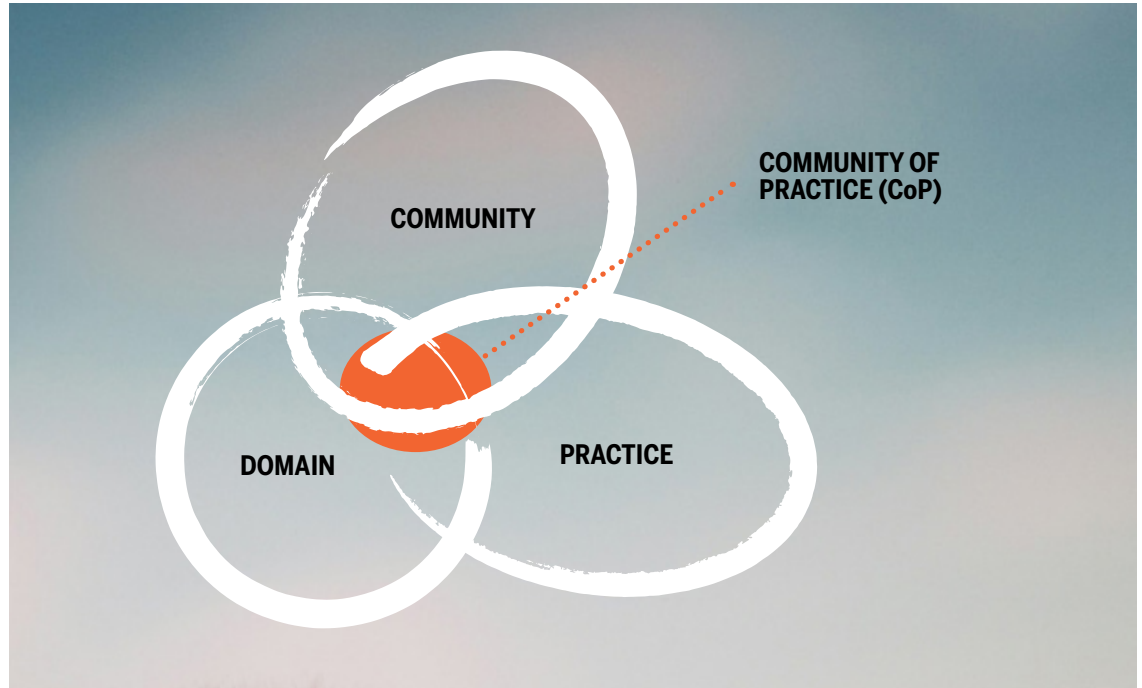
In the era of AI, each dimension of a CoP is being reshaped. Communities now extend beyond physical workplaces or organizational charts, operating across global, distributed networks enabled by digital or hybrid platforms. Domains are no longer clearly bounded; instead, they increasingly span interdisciplinary and transdisciplinary terrain. Practices, meanwhile,

**Notes**

1. The concept of the dandelion-shaped leader was inspired by a presentation by CR Chen, Senior Manager at Qisda Corporation, delivered at Tatung University on December 10, 2025.

**FIGURE 1**

*A community of practice (CoP) is structured around three interrelated dimensions—community, domain, and practice. Adapted from Wenger (2012).*



have become more accessible and fluid as generative AI tools lower barriers to entry, accelerate skill acquisition and solution implementation, and compress learning curves. These shifts invite a reframing of CoPs—from a learning theory to a form of leadership infrastructure for design organizations. While AI disrupts what we know and how we work, CoPs sustain how organizations learn, adapt, and collectively make sense of change. Positioned at the intersection of community, domain, and practice, CoPs provide a stabilizing yet fluid structure amid continuous technological uncertainty and sociocultural transformation, enabling organizations and leaders to evolve without losing coherence or initial purpose.

Within this reframed understanding, design leadership must also evolve. Traditionally, design organizations have relied on T-shaped leaders or talents—individuals with deep expertise in a single discipline complemented by the ability to collaborate across functions.  $\pi$ -shaped leaders extend this model by developing depth in two or more areas, enabling them to navigate complexity,

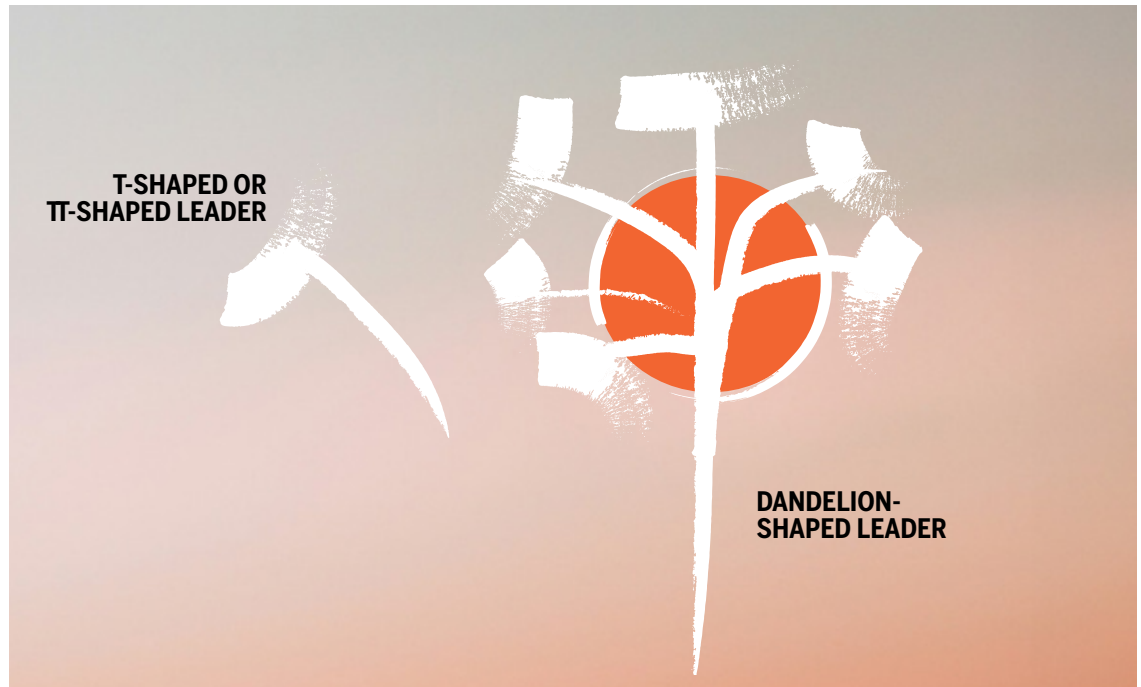
connect diverse fields, and drive innovation through both specialization and breadth. These archetypes emphasize expertise, execution, and direction setting within relatively stable knowledge domains. However, the conditions design leaders face today call for a different orientation. The AI era has demanded a disruptive shift from T-shaped or  $\pi$ -shaped expertise toward more adaptive and resilient “dandelion-shaped” leaders.<sup>1</sup> These are leaders who are rooted in core values, yet capable of extending flexibly across communities, domains, and practices (Figure 2). Rather than accumulating expertise and knowledge as individuals, dandelion-shaped leaders cultivate and nurture the conditions of CoP, investing in sociocultural environments that enable collective learning, sustained practice, and inclusive decision-making. (See Figure 2).

In this context, leadership priorities expand. Problem finding becomes as critical as problem-solving; curation becomes as essential as execution; and participation becomes as vital as direction setting. Design leaders are no longer positioned solely as experts or top-down decision-makers, but increasingly as facilitators

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**FIGURE 2**

*Transition in design leadership from T-shaped or  $\pi$ -shaped expertise toward more adaptive and resilient dandelion-shaped leaders: individuals rooted in core values while flexibly extending across communities, domains, and practices. Image credit: Sheng-Hung Lee.*



and stewards of collective learning within CoPs. To better illustrate this transformational shift, Figure 3 contrasts T-shaped and  $\pi$ -shaped leadership with the dandelion-shaped archetype across five dimensions: leadership archetype, foundation of expertise, leadership focus, primary leadership actions, and alignment with AI-enabled organizational contexts. (See Figure 3, p.12).

### **AI as a catalyst: how CoPs are transforming in the age of intelligent tools**

Artificial intelligence is acting as a catalyst for transformation across fields far beyond design. Within this shift, CoPs function as critical social infrastructures in which AI tools are not merely adopted but collectively explored, critiqued, and normalized through shared practice. Rather than positioning AI as a threat, CoPs can provide safe, communicative spaces where designers can learn with AI: experiment together, question outputs, and build confidence through participation. In this context, dandelion-shaped design leaders play a pivotal role. By leveraging CoPs, dandelion-

shaped leaders can cultivate psychologically safe, collaborative environments where shared experimentation reduces fear, distributes risk, and accelerates meaningful adoption. Design leadership shifts away from individual expertise toward enabling collective learning, reinforcing the idea that designers are not replaced by AI, but repositioned alongside it.

As AI becomes embedded in everyday work, new practices emerge within CoPs. One example is prompt literacy, which evolves as a shared and negotiated competence rather than an individual technical skill. The growing accessibility and perceived reliability of AI tools fundamentally reshape how design leaders define knowledge. We are moving away from viewing knowledge as a scarce asset to be protected toward recognizing the importance of collective sensemaking, including interpreting, contextualizing, and validating AI-generated outputs together. This transition requires design leaders to unlearn traditional models of authority built on information asymmetry. Instead of maintaining knowledge gaps, design leadership in the AI era depends on activating peer review, dialogue, and collaborative

## Looking ahead, the role of the design leader increasingly resembles that of a steward of learning ecosystems.

**FIGURE 3**

*A comparison of T-shaped/ $\pi$ -shaped, and dandelion-shaped leadership archetypes.*

ARCHETYPES	T-SHAPED/ $\pi$ -SHAPED LEADERS	DANDELION-SHAPED LEADERS
Foundation of expertise	One or more expertise, with the ability to extend horizontally into adjacent domains	Capabilities grounded in the evolving complex needs of communities, practices, and systems
Leadership focus	<ul style="list-style-type: none"> <li>• Individual expertise and authority</li> <li>• Skill-based and role-defined</li> <li>• Solving defined problems</li> </ul>	<ul style="list-style-type: none"> <li>• Collective learning and shared practice</li> <li>• Integrated, context-dependent skills</li> <li>• Identifying and framing emerging problems</li> </ul>
Primary leadership actions	<ul style="list-style-type: none"> <li>• Problem-solving</li> <li>• Execution</li> <li>• Direction-setting</li> <li>• Decision-making</li> </ul>	<ul style="list-style-type: none"> <li>• Problem-finding</li> <li>• Curation</li> <li>• Participation</li> <li>• Facilitation</li> </ul>
Alignment with AI-enabled contexts	<ul style="list-style-type: none"> <li>• Coordination across functions</li> <li>• Optimizes efficiency in stable or well-bounded tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Cultivation of communities of practice</li> <li>• Enables adaptive sensemaking and experimentation in uncertain environments</li> </ul>

interpretation. Ethical norms and boundaries around AI are likewise shaped through practice and negotiated socially within CoPs rather than dictated solely by top-down policies or technical rules. Such ethical work cuts across domains and is inseparable from everyday design practice.

Ultimately, the success of AI adoption in design leadership lies not in technical proficiency alone, but in learning that is social, cultural, iterative, and context-dependent—precisely the conditions that CoPs enable. In this sense, CoPs do not merely support AI integration; they unlock new forms of leadership and prepare the next generation of design talent for an increasingly intelligent, uncertain, and collective future. The following section illustrates how these dynamics unfold in practice, examining how design leaders integrate AI through CoP rituals within real organizational settings, by grounding abstract concepts such as prompt literacy and collective sensemaking in everyday practices to demonstrate what AI-enabled leadership looks like in action.

### Design leadership in action: cultivating communities of practice

What, then, can design leaders learn from CoPs when translating learning and educational theory into action within design leadership? Drawing on both the literature and lived experience, this article identifies four key leadership shifts embodied by dandelion-shaped design leaders.

First, the leadership role evolves from that of director to one of gardener. Rather than orchestrating outcomes, leaders focus on cultivating the conditions for learning and practice to grow. Second, design leaders prioritize creating safe and creative environments that empower collaboration, experimentation, and dialogue rather than providing predefined design solutions for implementation. Third, effective leaders actively support active participation, building trust and legitimacy through organizational structures and cultural signals that recognize practice-based contributions. Fourth, leaders need to protect time and space for practice-based learning—spaces for doing, reflecting, and experimenting—rather than allowing CoPs to be absorbed into routine meetings or administrative tasks.

Beyond leadership posture, an important question emerges: What tools, rituals, and structures sustain CoPs in the context of AI and design leadership? Three interrelated elements are particularly critical. The first is shared artifacts, such as canvases, pattern libraries or AI playbooks, which externalize knowledge and provide common reference points for collective sensemaking. The second is regular reflection rituals, including show-and-tell sessions, critiques, retrospectives, and postmortems, which transform individual experiences into shared learning. The third is lightweight digital infrastructure, such as Slack, Miro, Notion, or AI sandboxes, that lower



**Sheng-Hung Lee, PhD** is an Assistant Professor of Urban Technology and Director of the *d-mix* lab at the University of Michigan. His work focuses on experience design, service innovation, urban systems, and Design for Longevity (DAL).

participation barriers while supporting ongoing experimentation and documentation.

Across these three primary elements, design leaders face a persistent tension: how to measure the value of creativity and learning without undermining practice itself. Traditional ROI-driven metrics often fail to capture the long-term value of CoPs and may inadvertently suppress experimentation. Instead, leaders can adopt more flexible, practice-sensitive indicators such as learning velocity, cross-boundary collaboration, and practice reuse. These measures better reflect the social, cumulative, and generative nature of CoPs, especially in AI-mediated design work.

### Looking forward: designing the future of design leadership

This article revisits design leadership through the lens of the knowledge economy, positioning the community of practice not merely as a learning theory but as a strategic leadership approach for navigating complexity, distributed expertise, and continuous transformation in the age of AI. To frame this shift, I envision AI as the wind—an invisible yet powerful force that reshapes organizational conditions through turbulence, shifting currents, and variable atmospheres. Within these conditions, dandelion-shaped design leaders are able to drift across boundaries, connect across domains, and take root in new contexts (Figure 4). Through this metaphor, the CoP becomes a lens for rethinking the evolving roles and responsibilities of design leaders, not as controllers of expertise, but as enablers of movement, connection, and growth.

Looking ahead, the role of the design leader increasingly resembles that of a steward of learning ecosystems. By cultivating CoPs, leaders enable organizations to remain deeply human-centered while evolving into AI-enabled platforms. In this framing, AI is not a replacement for human creativity or judgment, but an amplifier of collective learning and shared practice. Viewed through the lens of CoPs, the success of design

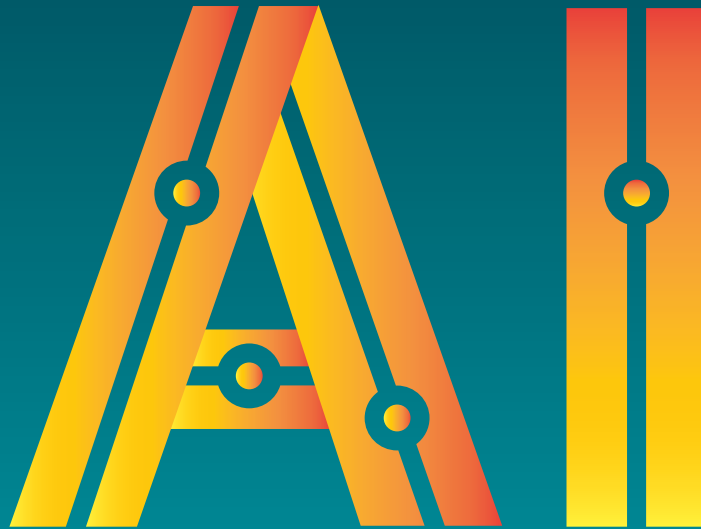


**FIGURE 4**

*AI as the wind: creating conditions through which dandelion-shaped design leaders drift, connect, and take root.*  
Image credit: Sheng-Hung Lee.

leadership in the AI era depends less on individual authority and more on three interconnected capacities: how effectively practices evolve over time, how fluidly knowledge circulates across boundaries, and how sustainably communities endure and renew themselves. Design leadership, therefore, is no longer defined by what one knows, but by how well one enables others to learn, practice, and adapt together, transforming intelligence into shared capability and long-term organizational resilience. ■

**LEADING DESIGN &  
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