

Field-First

What a kingfisher, a slime mold, and ten thousand years of human villages can teach us about redrawing roles in the age of AI.

By **Hisham Elmanzalawy** · Founder, Luxlen Talent · August 2026 · luxlentalent.com

It is not uncommon for us to borrow our best ideas from the world that was here before we were.

A bird and a mold

In the 1990s, Japanese engineers had a noise problem. The Shinkansen bullet trains had gotten fast enough that when one entered a tunnel, it compressed the air ahead of it like a piston, and that pressure wave burst out of the far end with a boom loud enough to rattle homes. Engineers tried dampers, tunnel modifications, speed limits. None of it worked well enough. The answer came from Eiji Nakatsu, an engineer at JR West who happened to be a serious birdwatcher. He knew a bird with exactly this problem: the kingfisher, which dives at full speed from air into water — a medium roughly eight hundred times denser — and enters with barely a splash. Its long, tapered beak is a shape evolution built for crossing between two worlds without announcing it. Nakatsu's team modeled the nose of the new 500 Series on that beak. The train that entered service in March 1997 cut air resistance by 30 percent, used about 15 percent less energy, ran 10 percent faster — and stayed under Japan's residential noise standard while doing it. A bird's beak gave them the answer.

A decade later, researchers in Japan ran a stranger experiment. They took a slime mold — a single-celled organism with no brain, no plan, no engineers — and placed oat flakes on a dish in the exact positions of Tokyo and the cities around it. The mold did what slime molds do: spread everywhere at once, reinforced the paths that fed it, and abandoned the ones that didn't. Within days, it settled into a network that looked strikingly like the greater Tokyo rail system — comparable in efficiency, cost, and resilience to what a century of deliberate engineering had produced. The researchers published it in *Science* in 2010, and then did the truly useful thing: they turned the mold's method into an algorithm.

Notice the difference between the two stories, because the whole argument that follows lives inside it. The kingfisher gave the engineers a design — a shape to copy. The slime mold gave the researchers a process — a way of finding shapes. And a process, unlike a design, can be pointed at new problems.

So here's a new problem to point it at. Companies everywhere are redrawing the lines around jobs right now, because AI is changing what one person can do faster than anyone can update a job description. If nature can teach us a nose cone and a rail map, can it teach us how to draw the lines around work itself? It turns out it already has — and the model organism is us. Before there was a single org chart on earth, human beings spent thousands of generations working out who does what. We just called it the village.

The village

Four forces did most of that work, all operating inside one hard constraint.

Necessity came first, because it had to. Somebody's hungry, somebody finds food; a rival band appears, somebody shapes wood and stone into weapons. Groups whose members happened to be good at these things ate and survived; groups without them didn't get to pass anything on.

Specialization turned survival into advantage. Adam Smith would put numbers on the logic centuries later: one man making a pin from start to finish might manage twenty in a day, while ten men each doing one step turned out forty-eight thousand. The village had discovered the same math by trial and error — let people do what they're demonstrably best at, and everyone eats better.

Specialization created surplus, and surplus changed everything. Starting around twelve thousand years ago, in at least eleven separate places on earth, people figured out farming — and for the first time a family could grow more than it needed. Surplus is what let a village afford a blacksmith who never touched a field. It's what made trade, and then an

economy, possible.

And surplus made room for meaning. Storytelling is older than farming — Marshall Sahlins argued that hunter-gatherers spent something like twenty hours a week on subsistence, leaving evenings full of firelight and talk. But the storyteller as a profession — the poet, the carver, the keeper of ritual — is a surplus product. Once the group could spare the hands, roles emerged that answered to something other than survival.

All of it ran inside one ceiling: about a hundred and fifty people, the number the anthropologist Robin Dunbar identified as roughly what a human brain can hold as genuine relationships. Under that ceiling, no chart was needed — everyone knew who the toolmaker was because everyone knew everyone. And notice what nobody did: nobody chose the blacksmith. Repetition and reputation did. A role was not assigned; it was noticed. What grew between these noticed roles is what Émile Durkheim later called organic solidarity — the baker needs the farmer, the farmer needs the toolmaker, and that web of mutual need becomes the culture itself. Solidarity wasn't a fifth force. It was the outcome the other four produced.

Now, step back and look at what those four forces were really doing, because there's a pattern hiding inside them. Necessity was the filter: it decided what work had to exist at all. Specialization was the selection: the village kept whoever proved good at the work. Surplus was the funding: it paid for the experiments — the roles nobody strictly needed yet. And meaning was the keeping: what a community holds onto once survival is paid for. Try, keep, fund the next try. Remember that loop. You're going to see it again.

The whole system had two defining properties. Authority sat with the person, not a position — the blacksmith's standing died with the blacksmith. And the clock ran in generations. The village's method worked beautifully, and it worked slowly.

The corporation — and the broken clock

The corporation kept the division of labor and threw out everything else. Max Weber named the change: rational-legal authority, where the position exists whether or not anyone is sitting in it — the exact inverse of the village, where the person and the role were the same thing. Alfred Chandler described how it operates: structure follows strategy. When the strategy shifts, someone whose job is redrawing the org chart redraws it — deliberately, on a schedule, in advance of hiring. It was a real trade: the village's kind of trust, exchanged for scale. And for more than a century, with strategy and technology moving at the pace of decades, the trade paid.

Then the clock broke. AI is changing what a single person can do — one person with good judgment and the right tools now covers ground that used to require a small team passing work between them. And here's another way to say that, in the village's own vocabulary: AI is the new surplus. Farming freed hands, and freed hands are what made the blacksmith affordable. AI frees capacity — and every hour it hands back is an hour a company can spend letting someone try a role that doesn't have a name yet. Surplus is what has always paid for new roles. We've just grown a fresh crop of it.

Companies see it, and most are responding exactly the way Chandler would predict: convening the redesign, drafting the new titles, publishing the new ladders. The trouble isn't the logic. It's the tempo. A redesign built around today's AI capability describes a capability that will have moved by the time the new job descriptions ship. Run the corporate method at AI speed and you are permanently one reorganization behind — which, from the inside, is indistinguishable from being wrong.

One caveat before the comparison, and Weber himself would have insisted on it: these are ideal types. No real village ran purely on trust, and plenty of corporations run on reputation more than title. The poles aren't a census — they're how you see which way the pressure leans.

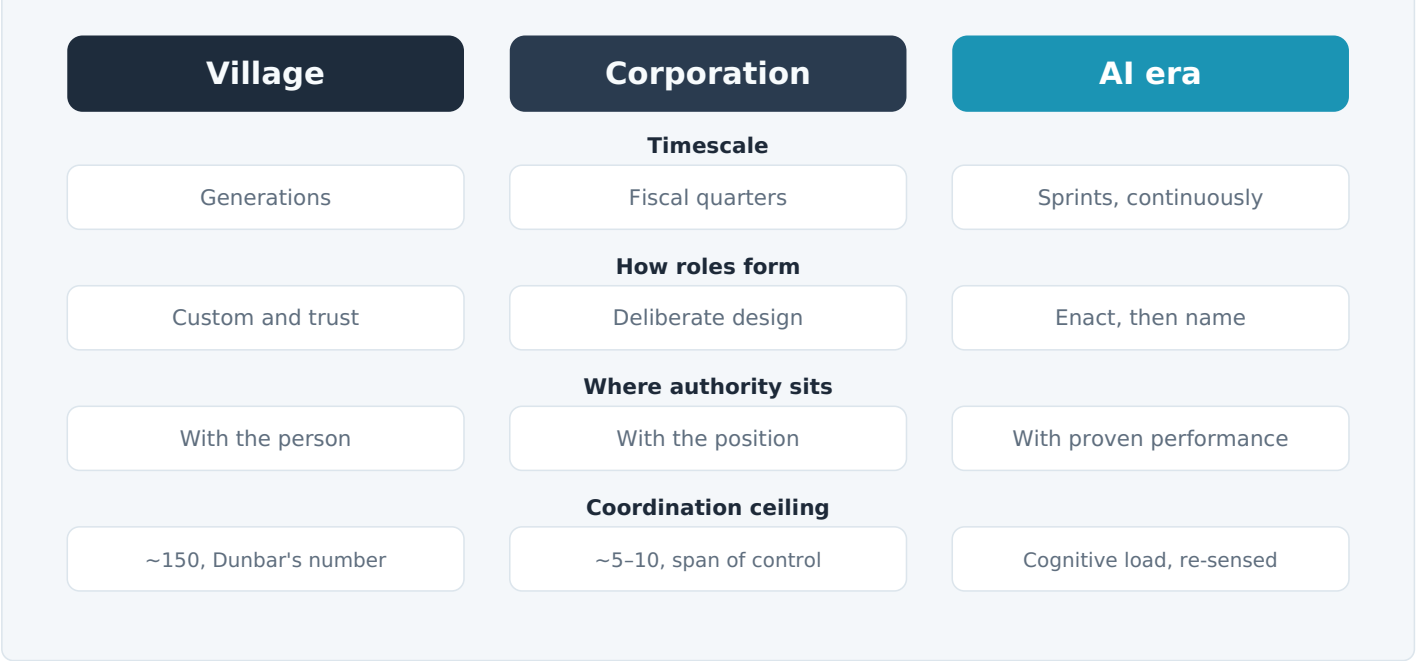


Figure 1. Three eras of drawing the lines around work — and what changed each time.

The options on the table

So what are the actual options? The toolkit for defining roles is richer than most companies realize, and it's worth laying it out honestly, including where each one breaks.

Methodology	What it is	Adaptability how easily it flexes	Legal exposure risk if challenged	Best fit
Organic / village	Roles form on their own through trust and repetition — nobody designs them	High day-to-day, can't redirect fast	High — no paper trail	Founding teams, pre-HR stage
Point-factor evaluation (Hay/Korn Ferry, WTW, Mercer)	Roles scored against fixed factors — skill, impact, accountability — to set level and pay	Low — costly to revise	Low — the pay-equity standard	Large, regulated, multi-country orgs
Stratified systems (Jaques)	Level set by how far ahead a role's decisions run before anyone reviews them	Medium — needs re-analysis	Medium — rigorous, less widely recognized	New senior roles judged by decision horizon
Competency-based	Role defined by the skills and behaviors it needs, not a task list	Medium-high	Medium — common, not a standard on its own	Fast-evolving technical roles
Team Topologies	Teams sized to what a group can actually hold, reshaped as the work changes	Very high — built to re-sense	High — not a pay or audit tool	Software orgs shaping how teams own work
Holacracy	Authority lives in defined roles inside self-governing circles, not managers	High within the system	High — hard to map to comp or legal frameworks	Small-mid orgs trading structure for fluidity
Field-first (enact, then codify)	Act first; name and formalize only the patterns that survive real work	Very high — the whole point	Medium — official after the fact	Fast-moving, AI-augmented teams

Table 1. Seven ways to draw the lines around work — and what each one trades away.

A few of these deserve a word beyond the table. Point-factor evaluation — the Hay method and its cousins — is the reigning standard for a reason: when a regulator or a pay-equity claim asks why two roles are graded differently, it produces a documented answer. That defensibility is exactly what the fast, adaptive approaches lack. Team Topologies, the closest thing software has to a living design method, sizes teams to cognitive load — Dunbar's ceiling, measured at the level of a team — and expects the shape to keep changing. And many companies are now adding an analytical front end borrowed from labor economics: the task-based framework, which since a 2003 paper by David Autor, Frank Levy, and Richard Murnane has treated a job not as a unit but as a bundle of tasks, each of which technology touches differently. Decompose the role, score each task for AI impact, re-bundle what's left. It's rigorous, and it has one blind spot the economists themselves have named: AI doesn't just remove tasks, it creates new ones — what Acemoglu and Restrepo call the reinstatement effect — and you cannot decompose a task that doesn't exist yet. Every method on this list except one shares that blind spot, because every method except one starts from the task list you already have.

Field-first

The exception is the last row, and it deserves a better name than the academic one. Call it field-first: the village's loop, run at corporate speed. Roles get noticed in the field, then named in the architecture.

Karl Weick supplied the mechanics back in 1969 — organizations, he argued, don't plan and then act; they act, and then make sense of what they did. Enactment, selection, retention. If that sounds familiar, it should — it's the village's loop with a professor's name on it. Nature supplied the same mechanics a few billion years earlier under a different name: variation, selection, retention. It's the loop that shaped the kingfisher's beak over millions of years, the loop the slime mold ran across a map of Tokyo in days, and the loop the village ran on itself across generations.

Same algorithm, three speeds. The speed, it turns out, is adjustable. The method isn't.

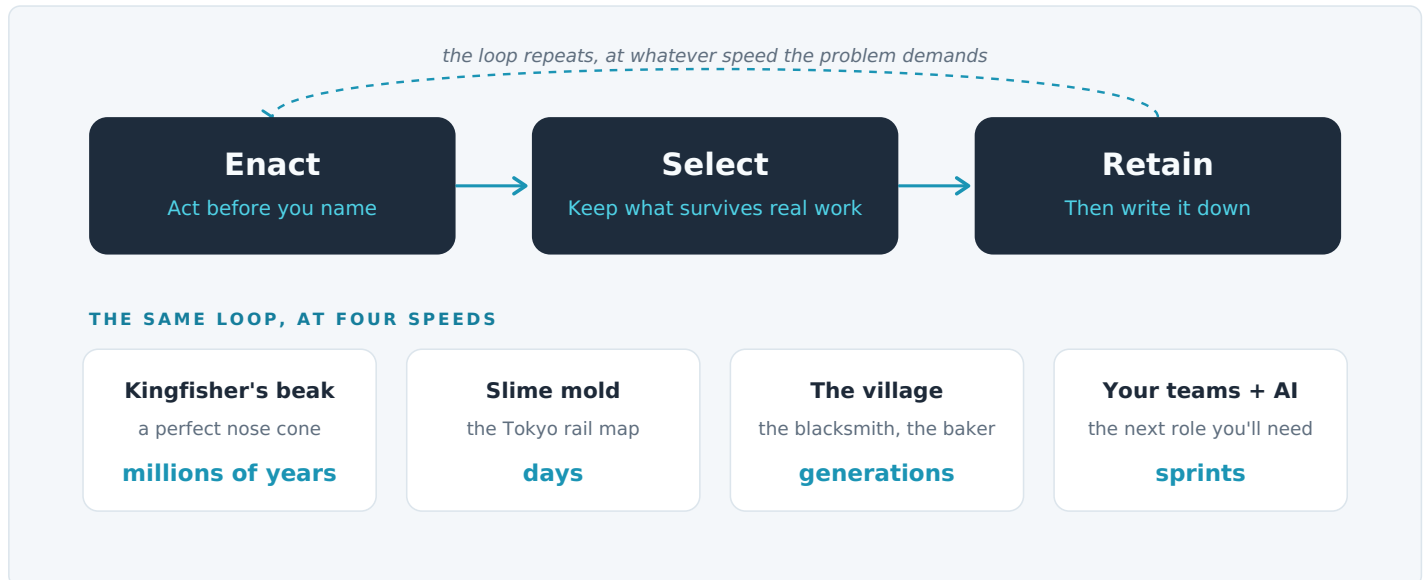


Figure 2. Field-first: nature's loop, run at organizational speed.

Applied to job architecture in the age of AI, field-first looks like this. Don't design the new role and hire into it. Put small teams to work with AI on real problems, with no title waiting for anyone in advance. That's what the new surplus is for. Watch what survives contact with real work — which tasks collapse into one person, which new tasks appear that no decomposition predicted. Then, and only then, do the corporation's job: name it, level it, write it into the architecture, using the defensible machinery — competency definitions, point-factor grading — as the retention step rather than the starting point. The org chart becomes a lagging document instead of a leading one. Discovery before naming, at sprint speed, with the paper trail arriving before compliance ever asks for it. That last part is not optional in regulated industries — a noticed role with no documentation is legal exposure wearing a friendly face — which is why the backfill step is not a compromise of the method. It is the method's final move.

A word on limits, because the method has them. Where a role's definition is imposed from outside — licensed professions, safety-critical positions, jobs whose boundaries are written into a collective-bargaining agreement — design-first isn't a habit, it's the law, and field-first has no business overriding it. The method earns its keep where the role is genuinely new and no regulator, license, or contract has defined it yet — which happens to be exactly where AI is creating roles fastest.

This isn't theoretical. Palantir has run a version of it for two decades — engineers embedded with users on two-week cycles, advancement by demonstrated performance, and a job title, forward deployed engineer, that was named after the practice existed, not before it. The honest caveat: much of that account is Palantir's own — filings and interviews, not independent audit — though the number of companies now copying the title suggests the practice is doing something the copies aren't.

And it isn't only a software story. Buurtzorg, the Dutch neighborhood-nursing organization, has run on the same sequence since 2006, in one of the most regulated industries there is: self-managing teams of ten to twelve nurses — right at the coordination ceiling from the table — decide among themselves who does what for the patients in their neighborhood, while a back office of roughly fifty people does the writing-down for more than ten thousand nurses across 850-plus teams, with no managers in between. A KPMG review found it a low-cost provider, and not because it picked easy patients. Different country, different industry, opposite end of the pay scale from Palantir — the same order of operations: the team acts, the institution records.

Back to the bird and the mold

The kingfisher never designed its beak; a few million years of variation, selection, and retention did, and the engineers had the humility to copy the result. The slime mold never planned a rail network; it ran the loop, and the researchers had the wit to copy the loop itself. That's the choice in front of every company redrawing its roles right now: copy someone else's finished design — a competitor's org chart, a consultant's template, a title that worked somewhere else — or run the process that produces designs that fit. Nature has never once done it the first way. It doesn't design first and live second. It lives first, keeps what works, and only then writes it down. The engineers couldn't ask the kingfisher to explain itself. We're luckier than they were. The organism we're copying is us — and the method is still running.

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Details of the Shinkansen 500 Series redesign are drawn from JR West accounts and contemporary engineering coverage; Palantir details are drawn from the company's public filings and interviews.



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This essay was researched and drafted in collaboration with Claude, Anthropic's AI assistant — a working method the article itself argues for. The argument, and any errors, are the author's.